

AD-A261 650

SECURITY CLASSIFICATION



AGE

Form Approved
OMB No. 0704-0188

1a. REPORT SECURITY CLASSIFICATION

N/A

RESTRICTIVE MARKINGS

A

2a. SECURITY CLASSIFICATION AUTHORITY

N/A

2b. DECLASSIFICATION/DOWNGRADING SCHEDULE

N/A

4. PERFORMING ORGANIZATION REPORT NUMBER

3. DISTRIBUTION/AVAILABILITY OF REPORT

Unclassified/Unlimited

5. MONITORING ORGANIZATION REPORT NUMBER

6a. NAME OF PERFORMING ORGANIZATION

Wilford Hall USAF Medical Center

6b. OFFICE SYMBOL

(If applicable)
SG-3R

7a. NAME OF MONITORING ORGANIZATION

US ARMY-BAYLOR UNIVERSITY GRADUATE PROGRAM IN HEALTH CARE ADMIN

6c. ADDRESS (City, State, and ZIP Code)

Lackland AFB TX 78236-5300

7b. ADDRESS (City, State, and ZIP Code)

AHS
San Antonio, TX 78234-6100

8a. NAME OF FUNDING/SPONSORING ORGANIZATION

8b. OFFICE SYMBOL
(If applicable)

9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER

8c. ADDRESS (City, State, and ZIP Code)

10. SOURCE OF FUNDING NUMBERS

PROGRAM
ELEMENT NO.PROJECT
NO.TASK
NO.WORK UNIT
ACCESSION NO.

11. TITLE (Include Security Classification)

Environmental Assessment of Beneficiary Demographics, Needs and Demands, and Incidence of Disease for Wilford Hall USAF Medical Center Service Area

12. PERSONAL AUTHOR(S)

Grems, Lawrence William

13a. TYPE OF REPORT

Final

13b. TIME COVERED

FROM 7-90 TO 7-91

14. DATE OF REPORT (Year, Month, Day)

1991 July 26

15. PAGE COUNT

197

16. SUPPLEMENTARY NOTATION

17. COSATI CODES

FIELD GROUP SUB-GROUP

18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

Wilford Hall USAF Medical Center is the major medical and surgical referral center of the Air Force. With a 1,009 bed capacity, Wilford Hall offers treatment in more than 135 medical specialties and subspecialties. The mission of Wilford Hall is to ensure maximum wartime readiness by providing both a worldwide tertiary referral center and operating a comprehensive community health care system for active duty personnel and other beneficiaries. As the Wilford Hall health care team enters the 1990s and prepares for the year 2000, a new organizational strategy is required to meet the health care needs of the catchment area population. The first step in performing this task is to identify the demographic scope of the beneficiary population and assess the capability of the medical center to meet the needs and demands of eligible beneficiaries. To provide this information for inclusion in the organizational strategic plan a three part analysis was developed to: (a) determine the size of the beneficiary population by age, gender, and beneficiary category; (b) identify the needs and demands of beneficiaries through the application of a Beneficiary Health Care Survey to (continued on reverse)

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT

☐ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS

21. ABSTRACT SECURITY CLASSIFICATION

N/A

22a. NAME OF RESPONSIBLE INDIVIDUAL

Lawrence W. Grems

22b. TELEPHONE (Include Area Code)

(512) 670-4006

22c. OFFICE SYMBOL

WHMC/SGK

19. a sample of the population; and (c) determine the incidence of disease through an analysis of the top twenty five Diagnostic Related Groups (DRGs) seen by Wilford Hall Medical Center, other combined Department of Defense (DoD) medical facilities, Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), and the U.S. population. This completed analysis provides valuable information that serves as a foundation for the medical center's strategic plan. It also assesses the needs of the beneficiary population and serves as a model for other health care administrators to follow during the development of their organizational strategic plan.



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS JOINT MILITARY MEDICAL COMMAND — SAN ANTONIO (ATC)
WILFORD HALL USAF MEDICAL CENTER
LACKLAND AIR FORCE BASE TX 78236-5300


25 JUL 1991

REPLY TO
ATTN OF **SG-3**

SUBJECT **Graduate Management Project (GMP) Submission**

TO **Chairman, Residency Committee**
U.S. Army-Baylor University Graduate Program
in Health Care Administration
ATTN: **HSMA-IHC**
Academy of Health Care Sciences, U.S. Army
Fort Sam Houston, Texas 78234-6100

I have reviewed and approved the GMP written by Captain Lawrence W. Grems. His report is a very valuable product for Wilford Hall and will be referred to extensively during our strategic planning conference scheduled for 6-7 Aug 91.


HAROLD W. GRINSTAFF
Colonel USAF, MSC
Administrator

1 Atch
GMP (original/3 copies)

**ENVIRONMENTAL ASSESSMENT OF BENEFICIARY DEMOGRAPHICS,
NEEDS AND DEMANDS, AND INCIDENCE OF DISEASE FOR
WILFORD HALL USAF MEDICAL CENTER SERVICE AREA**

A Graduate Management Project

Submitted to the Faculty of

Baylor University

In Partial Fulfillment of the

Requirements for the Degree

of

Master of Health Administration

by

Captain Lawrence W. Grems, USAF, MSC

26 July 1991

93-04773



Running head: ENVIRONMENTAL ASSESSMENT FOR WHMC

Environmental Assessment

Acknowledgments

I could not have completed this research project without the help of many special people. First, I'd like to thank Colonel Harold W. Grinstaff, WHMC Administrator, for his inspiration and guidance throughout the past year. He is a preceptor's preceptor and it has been a privilege to be his student. Next, I'm grateful for the contributions made by Dr. Clifford Butzen, Ms. Judy Allen, and Ms. Grantham in the Clinical Investigations Directorate, WHMC, for their tireless efforts in providing all the statistical and editing support required. I owe a very special thanks to Lieutenant Colonel Russ Coleman, WHMC, who took the time to listen to my ideas and provided me with meaningful feedback. I am indebted to Lieutenant Colonel F. William Brown and Dr. Kenn Finstuen, Academy of Health Sciences, for their assistance and guidance in helping me plan for and complete this project. I'd also like to thank Major Holly Horzempa, a fellow classmate, for her support in helping me complete the administrative tasks associated with mailing out the surveys. Finally, this research project is dedicated to my two children, Jennifer and Brad, for sacrificing their time with me over the past two years in support of my education.

Environmental Assessment

Abstract

Wilford Hall USAF Medical Center is the major medical and surgical referral center of the Air Force. With a 1,009 bed capacity, Wilford Hall offers treatment in more than 135 medical specialties and subspecialties. The mission of Wilford Hall is to ensure maximum wartime readiness by providing both a worldwide tertiary referral center and operating a comprehensive community health care system for active duty personnel and other beneficiaries. As the Wilford Hall health care team enters the 1990s and prepares for the year 2000, a new organizational strategy is required to meet the health care needs of the catchment area population. The first step in performing this task is to identify the demographic scope of the beneficiary population and assess the capability of the medical center to meet the needs and demands of eligible beneficiaries. To provide this information for inclusion in the organizational strategic plan a three part analysis was developed to: (a) determine the size of the beneficiary population by age, gender, and beneficiary category; (b) identify the needs and demands of beneficiaries through the application of a Beneficiary Health Care Survey to a sample of the population; and (c) determine the

Environmental Assessment

incidence of disease through an analysis of the top twenty five Diagnostic Related Groups (DRGs) seen by Wilford Hall Medical Center, other combined Department of Defense (DoD) medical facilities, Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), and the U.S. population. This completed analysis provides valuable information that serves as a foundation for the medical center's strategic plan. It also assesses the needs of the beneficiary population and serves as a model for other health care administrators to follow during the development of their organizational strategic plan.

Environmental Assessment

Table of Contents

	PAGES
Acknowledgments.....	1
Abstract.....	11
Chapter	
I. Introduction.....	1
Conditions Which Prompted the Study.....	1
Statement of the Management Problem.....	3
Literature Review.....	3
Purpose of the Study.....	9
II. Methods and Procedures.....	11
Analysis of Catchment Area Population....	12
Development of the Survey Instrument....	14
Sample Population.....	20
Survey Administration.....	25
Determination of Disease Incidence.....	27
Analysis and Comparison of Disease Incidence.....	32
III. Results.....	33
Demographic Profiles.....	33
Survey Responses.....	44
Disease Incidence.....	62
IV. Discussion.....	78
Demographic Analysis.....	78
Beneficiary Health Care Survey.....	82
Analysis of Disease Incidence.....	101
V. Summary.....	109
VI. References.....	111
List of Tables	
Table 1. Total DoD Beneficiary Population in the United States by Age and Gender....	115
Table 2. Total U.S. Beneficiary Population by Sponsor Branch of Service.....	116
Table 3. WHMC Catchment Area Beneficiaries by Age and Gender.....	117
Table 4. WHMC Catchment Area Beneficiary Population by Sponsor Branch of Service....	118

Environmental Assessment

Table 5.	BAMC Catchment Area Beneficiaries by Age and Gender.....	119
Table 6.	BAMC Catchment Area Beneficiary Population by Branch of Service.....	120
Table 7.	WHMC Service Area Beneficiaries by Age and Gender.....	121
Table 8.	WHMC Service Area Beneficiary Population by Branch of Service.....	122
Table 9.	Comparison of DEERS Data Base to Other Personnel Data Bases in San Antonio..	123
Table 10.	WHMC Beneficiary Health Care Survey Sample Population.....	124
Table 11.	Demographic Information on Sponsors in the WHMC Service Area that Responded to the Beneficiary Health Care Survey.....	125
Table 12.	Demographic Information for Beneficiaries in the WHMC Service Area that Responded to the Beneficiary Health Care Survey.....	126
Table 13.	Inpatient Care experienced by WHMC Service Area Beneficiaries: Military and Civilian Facilities Combined.....	127
Table 14.	Location of Inpatient Care Reported by Beneficiaries in the WHMC Service Area..	129
Table 15.	Inpatient Utilization, by Catchment Area and Medical Facility, for WHMC Service Area Beneficiaries.....	130
Table 16.	Inpatient Utilization of Military, VA, and Civilian Medical Facilities, by Branch of Service, for WHMC Service Area Beneficiaries.....	131
Table 17.	Inpatient Utilization of Military, VA, and Civilian Medical Facilities, by Branch of Service, for WHMC Catchment Area Beneficiaries.....	132
Table 18.	Inpatient Utilization of Military, VA, and Civilian Medical Facilities, by Branch of Service, for BAMC Catchment Area Beneficiaries.....	133
Table 19.	Inpatient Care Experienced by WHMC Service Area Beneficiaries: Clinical Service Utilization at Military and Civilian Facilities.....	134
Table 20.	Inpatient Care Experienced by WHMC Service Area Beneficiaries: Method of Payment (Civilian and Military Facilities Combined).....	135
Table 21.	Family Use of Health Care Services: Hospital Bed Days and Dental Visits.....	136

Environmental Assessment

Table 22. Visits Reported by WHMC Service Area Beneficiaries for the Entire Family (Some Responses Equalled "Zero").....	137
Table 23. Visits Reported by WHMC Service Area Beneficiaries for the Entire Family (Responses Do Not Equal "Zero").....	139
Table 24. Outpatient Care Experienced by WHMC Service Area Beneficiaries in 1990.....	141
Table 25. Waiting Time for Outpatient Care Experienced in 1990 by WHMC Service Area Beneficiaries.....	142
Table 26. Outpatient Care Experienced by WHMC Service Area Beneficiaries: Location of Care and Source of Payment.....	144
Table 27. Outpatient Utilization, by Catchment Area and Medical Facility, for WHMC Service Area Beneficiaries.....	146
Table 28. Outpatient Utilization of Medical Treatment Facilities, by Branch of Service, for WHMC Service Area Beneficiaries.....	147
Table 29. Outpatient Utilization of Medical Treatment Facilities, by Branch of Service, for WHMC Catchment Area Beneficiaries.....	148
Table 30. Outpatient Utilization of Medical Treatment Facilities, by Branch of Service, for BAMC Catchment Area Beneficiaries.....	149
Table 31. Reason for Outpatient Care and Clinical Service Used for WHMC Service Area Beneficiaries in 1990.....	150
Table 32. Civilian Facilities Used by WHMC Service Area Beneficiaries for Outpatient and Inpatient Care.....	152
Table 33. Utilization of Outpatient Clinical Services by Beneficiaries in the WHMC Service Area.....	153
Table 34. Reason Why Beneficiaries Could Not Obtain Desired Health Care Services From the Military Health Care System.....	154
Table 35. Number of Times a WHMC Service Area Beneficiary Went to a Civilian Provider Because of Limited Access at a Military Treatment Facility.....	155
Table 36. Medical and Dental Insurance Coverage for WHMC Service Area Beneficiaries.....	156
Table 37. Utilization of Medical Treatment Facilities, in Relation to Insurance Coverage, for WHMC Service Area Beneficiaries.....	158

Environmental Assessment

Table 38. General Opinions about Health Care Services Provided at WHMC.....	159
Table 39. Beneficiary Comments, (Improvements, Best Services, New Services).....	161
Table 40. Methods of Obtaining Health Care Information for Beneficiaries in the WHMC Service Area.....	163
Table 41. Delta Dental participation and Beneficiary Awareness of WHMC Refill Pharmacy.....	164
Table 42. WHMC Top Twenty Five DRGs by Beneficiary Category.....	165
Table 43. WHMC Top Twenty Five DRGs, All Patients.....	166
Table 44. WHMC FY89 Top Twenty Five DRGs, WHMC Catchment Area Beneficiaries.....	167
Table 45. WHMC FY89 Top Twenty Five DRGs, BAMC Catchment Area Beneficiaries.....	168
Table 46. WHMC FY89 Top Twenty Five DRGs, Other Catchment Area Beneficiaries.....	169
Table 47. WHMC Catchment Area Beneficiaries Treated at BAMC.....	170
Table 48. WHMC Catchment Area Beneficiaries Treated at Other DoD Medical Treatment Facilities.....	171
Table 49. WHMC Catchment Area Beneficiaries Treated by CHAMPUS (External) Providers....	172
Table 50. Top Twenty Five DRGs for DoD Beneficiaries Treated in DoD Medical Facilities (Excluding WHMC Catchment Area Beneficiaries).....	173
Table 51. Top Twenty Five DRGs for DoD Beneficiaries Treated Through CHAMPUS (Excluding WHMC Catchment Area Beneficiaries).....	174
Table 52. Twenty Five Most Frequent DRGs, Ranked by all Medicare Inpatient Discharges, for Patients Treated in U.S. Hospitals.....	175
Table 53. Twenty Five Most Frequent Illnesses for the U.S. Population, Ranked by Beddays.....	176
Table 54. Comparison of the Top Twenty Five DRGs for WHMC Patients and DoD Beneficiaries.....	177
Table 55. Comparison of the Top Twenty Five DRGs for WHMC Catchment Area Beneficiaries and DoD Beneficiaries Seen Through CHAMPUS.....	179

Environmental Assessment

Table 56. Comparison of the Top Twenty Five DRGs for WHMC Patients (Retired and Dependents of Retired Personnel) and Medicare Patients Seen in U.S. Hospitals....	181
Table 57. Comparison of the Top Twenty Five DRGs for WHMC Patients and the General Public in the U.S. Reported by HHS from the National Health Interview Survey.....	182

List of Figures

Fig. 1 Environmental Assessment Model.....	183
--	-----

Appendices

A. Survey Approval Letter.....	184
B. Survey Announcement Letter.....	185
C. WHMC Beneficiary Health Care Survey.....	186

Introduction

Conditions Which Prompted the Study

Wilford Hall USAF Medical Center (WHMC or Wilford Hall) is in the process of developing a strategic plan that will guide the organization into the next century. The first step in developing a comprehensive strategic plan is to assess the environment and determine the scope of the needs and demands of potential beneficiaries in the catchment area. The catchment area for Wilford Hall includes all of Bexar county and surrounding communities. In addition to providing primary health care for beneficiaries in the catchment area, Wilford Hall is the major medical and surgical facility of the Air Force with a worldwide referral mission. High quality health care delivery is important to maintain the readiness posture of the Air Force and formulation of a comprehensive strategic plan is necessary for successful mission accomplishment.

In November 1983, the rededication of Wilford Hall USAF Medical Center marked the completion of a seven year renovation and expansion project that tripled the size of the medical center. The operating bed capacity rose to 1,009 beds and more than 135 medical specialties and subspecialties were offered to support the worldwide mission. Wilford Hall provides advanced medical

education for more than half of the Air Force's physicians and is one of three level I emergency centers in San Antonio. With over 300 clinical research and training projects in progress, Wilford Hall is on the cutting edge of the most state-of-the-art medical technology. With two dental clinics and 135 operatories, Wilford Hall also has the largest and most comprehensive dental and oral surgery practice in the Air Force. Resources necessary to accomplish this vast mission include over 4,100 military and civilian personnel and a budget in excess of \$95 Million. Up to 2,000 admissions and 75,000 outpatient visits are seen every month, making Wilford Hall one of the largest and most comprehensive medical centers in the Department of Defense (DoD) (Air Force Fact Sheet).

The future of Wilford Hall rests on the ability of executive management to plan for and provide comprehensive health care services required to meet the needs of the beneficiary population. A comprehensive strategic plan provides the vision, goals, and framework necessary to accomplish this task. The foundation of the strategic plan rests on information provided by the environmental assessment, considered to be the most important activity in the entire strategic planning process (Griffith, 1987).

Statement of the Management Problem

A comprehensive environmental assessment has not been accomplished. Wilford Hall USAF Medical Center executives do not know the size of the beneficiary population in the catchment area and do not have sufficient information to assess the needs and demands of eligible beneficiaries. In addition, they are uncertain of the incidence of disease for beneficiaries who are likely to seek care from the military health care system, specifically those seeking care in the WHMC catchment area.

Literature Review

Health care strategic planning

The concept of planning for the future is not new. Large corporations have been involved in strategic planning activities since the early 1970s (Pegels & Rogers, 1988). However, health care executives have only realized the importance of strategic planning within the past five to seven years (Pegels & Rogers, 1988). The health care industry has experienced tremendous change, forcing chief executive officers (CEOs) and hospital boards to develop long range plans to remain competitive (Folger, 1990; Costello, 1989). Additionally, strategic planning facilitates the

reorganization efforts required for organizational survivability (Costello, 1989; Brown & Brown, 1989).

One of the unique aspects of strategic planning is the process of matching organizational resources with environmental threats and opportunities (Flexner, Berkowitz, & Brown, 1981; Pegels & Rogers, 1988). To assess the external threats and opportunities that may affect an organization, a process called environmental assessment, analysis, or scanning is performed (Flexner et al., 1981; Pegels & Rogers, 1988; Webber & Peters, 1983).

Environmental assessment

An environmental assessment is not concerned with the ecological factors in the community such as air, water, and noise pollution. In terms of building a foundation of information for a medical facility strategic plan, an environmental assessment is an accumulation of detailed, quantified data that takes into account many different factors (Flexner, et al., 1981; Griffith, 1987; Pegels and Rogers, 1988). The following factors should be considered when performing an assessment of the external environment: (a) size and age distribution of the community; (b) consumer needs, demands and preferences regarding selection of the type and place of care desired; (c) technological advances;

(d) services offered by other providers in the community; (e) employee satisfaction; (f) regulatory changes; and (g) social and economic trends (Flexner et al., 1981; Folger, 1990; Griffith, 1987; Pegels & Rogers, 1988). Although a good environmental assessment will include the factors listed above, this does not guarantee the product is free from bias or omission (Griffith, 1987). The planner should be aware of the pitfalls associated with performing an environmental assessment and be ready to take the necessary steps to assure a quality product.

Griffith (1987) identifies two principles planners should follow to preclude problems with bias and omission: (a) Determine the needs and desires of people in the community, not what employees in the organization think the people want and (b) keep the focus of the assessment broad enough to allow a free exchange of ideas. The environmental assessment is an important part of the strategic plan and planners should make every effort to identify important trends or highlight new attitudes found among consumers.

One of the factors identified by Griffith (1987) as being an important part of the environmental assessment is determining the needs and desires of the consumer. Although surveys are expensive, they are one of the best

ways to determine consumer preferences and behavior (Flexner et al., 1981; Folger, 1990; Griffith, 1987).

Survey instruments

Surveys facilitate the gathering of data in many different settings and vary in size, type, and method. Abramson (1984) defines a survey as "an investigation in which information is systematically collected, but in which the experimental method is not used" (p. 7). Surveys are further divided into two types: descriptive and analytical. Descriptive surveys describe situations, whereas, analytical surveys explain why a situation exists (Abramson, 1984). A household survey (usually completed by one person in the house but pertains to all who live in the domicile) is an example of a descriptive survey.

Surveys can be completed by face to face interviews or through a questionnaire that is normally mailed to respondents who are selected from a sample of the population. The type of questionnaire developed for this project resembles the household survey. This type of survey is used by the census bureau, appears to be the format used for the National Health Interview Survey, developed by the Department of Health and Human Services (U.S. Department of Health and Human Services, 1980), and is recognized as the regular source of

information pertaining to differences in morbidity in Great Britain (Cartwright, 1983).

Determining what to ask in a questionnaire is important because it should focus on or provide the data to solve the problem stated in the study. Abramson (1984) suggests five requirements to follow when constructing a questionnaire: (a) ensure questions have face validity, (b) respondents should know the answers to the questions, (c) questions should be clear and easy to understand, (d) omit offensive or threatening questions, and (e) questions should be fair and impartial. Bradburn and Sudman (1979) describe threatening questions as those that offend respondents and confound the validity of the survey instrument. Although they admit there is no easy way to check for threatening questions, a survey pre-test may reveal information needed to correct this problem. Respondents may not answer certain questions or a wide range of answers may be found (when they were not expected) indicating a possible problem with the survey instrument. Errors in the survey instrument will not be totally eliminated using the criteria listed above, but, will be kept to a minimum and will be easier to detect.

Analysis of disease incidence

Another method of assessing the health needs of the community is through the application of morbidity incidence rates. An epidemiological profile of the catchment area provides valuable information and serves as another source of determining services a hospital should provide for the beneficiary population (Environmental Assessment Workbook, 1989; Finnegan & Ervin, 1989; Martin, 1988; Welch, 1988).

Epidemiology is "the study of the distribution and determinants of diseases and injuries in human populations" (Mausner & Kramer, 1985, p. 1). Through the use of morbidity rates derived from various data bases, a more in-depth analysis can be performed to assess the potential incidence of various diseases a hospital may encounter. When community assessments are conducted, this type of analysis is often used to determine the community diagnosis: identification of health problems in a specific geographical area (Finnegan & Ervin, 1989).

Utilizing morbidity data in the strategic planning process serves two unique purposes: (a) It provides information necessary for projecting resource requirements based on the potential incidence of disease

for a defined population and (b) the data is useful for identifying populations at risk. Through the application of this data, a medical facility can help prevent or halt the progression of disease by offering various programs and services which may have been unavailable or in limited quantities in the past (Finnegan & Ervin, 1989).

Purpose of the Study

The purpose of this environmental assessment is to:

(a) Determine the beneficiary population in the Wilford Hall USAF Medical Center catchment area, (b) assess the needs and demands of the beneficiary population through the administration of a Beneficiary Health Care Survey, and (c) assess the capability of Wilford Hall to provide care to eligible beneficiaries by conducting an analysis of the catchment area population using disease incidence information.

Objectives

1. Determine the demographic profile of the beneficiary population to include beneficiary category, age, and gender.
2. Develop the survey instrument.
3. Administer a pre-test of the survey instrument.

4. Determine the stratified (random) sample population in the WHMC Service Area.
5. Administer the survey to the sample population.
6. Analyze the results of the survey and determine characteristics in answers provided by beneficiaries.
7. Obtain the disease incidence data for the top 25 diagnosis related groups (DRGs) seen by Wilford Hall USAF Medical Center, combined DoD medical facilities (excluding WHMC), and other non-DoD medical facilities in the U.S.
8. Through a comparison of data from the Retrospective Case Mix Analysis System (RCMAS) and U.S. Department of Health and Human Services, analyze the incidence of disease for Wilford Hall USAF Medical Center, other combined DoD facilities, CHAMPUS, and the U.S. population.

Methods and Procedures

To perform the analysis for this graduate project, three different approaches were used. First, data was collected from existing sources (Defense Eligibility Enrollment Reporting System (DEERS), Air Force Personnel Data System, and Fort Sam Houston Statistics Branch) to determine the catchment area population. Next, To identify the needs and demands of the beneficiary population, a survey instrument was developed, validated, and administered to a randomly drawn, stratified sample of the Wilford Hall service area population (combination of Wilford Hall and Brooke Army Medical Center (BAMC) catchment areas). The survey for this study was developed from the DoD Health Care Survey administered to DoD beneficiaries in 1984. Only minor modifications were necessary to tailor the existing survey into a usable product for Wilford Hall.

An analysis of disease incidence was conducted using disease incidence data from the Retrospective Case Mix Analysis System (RCMAS) and information obtained from the Department of Health and Human Services (HHS). The RCMAS data base provides information on disease incidence (by DRG) for all DoD medical facilities and can be manipulated to report disease incidence for specific facilities and beneficiary categories.

Information obtained from HHS identifies the diseases/illnesses reported by a sample of the U.S. population through an HHS health care survey administered every year to the American public (Adams & Benson, 1990). The disease incidence for Wilford Hall was compared with other combined DoD facilities, CHAMPUS, and the U.S. population to determine the differences and similarities between them for each beneficiary category.

Analysis of Catchment Area Population

The population and demographic information for patients in the Wilford Hall and Brooke Army Medical Center catchment areas was determined using data from two sources: (a) DEERS and (b) Resource Analysis and Planning System (RAPS), which are both found in the Defense Management Information System (DMIS). The DEERS data base contains demographic data on every person in the military (active duty, active duty dependent, retired, dependents of retired personnel and survivors) who has a military identification card and others who are enrolled into the system by their military sponsors. After the demographic information was collected from the DEERS data base, it was compared to other sources of data available through personnel offices at military

installations in the San Antonio area. Results of this comparison are found in the Results section of this report. Comparisons were made to validate the accuracy of the DEERS data base and to determine other sources of information on the catchment area population. According to sources at the Air Force Military Personnel Center (AFMPC), Randolph AFB, TX and Population Statistics Branch, Fort Sam Houston, TX, the DEERS data base is the most widely used source of information when population demographic information is needed. Although the validity and accuracy of the DEERS data base has been questioned by some, it appears to be the best source of information compared to other data bases available.

The DEERS data base provides population statistics for military treatment facility catchment areas using rules established in RAPS. RAPS (a planning tool) takes data in the DEERS data base and manipulates it depending on the type of report needed. If catchment area statistics are needed, RAPS will separate beneficiaries into zip code clusters and assign them to a medical treatment facility (MTF) based on their zip code. When there are two or more MTFs which have overlapping catchment areas (like the San Antonio military community), RAPS will allow for the overlap and will not double count individuals in the population

count for each MTF. Therefore, when a beneficiary lives in a zip code which can be included in both MTF catchment areas (e.g., WHMC and BAMC), RAPS automatically assigns the beneficiary to one of the MTFs using rules established by the Office of the Assistant Secretary of Defense (Health Affairs) (OASD(HA)). Wilford Hall and Brooke Army medical center catchment areas overlap almost entirely over one another. Since they are so close together and it is not possible to determine where every beneficiary obtains health care services (although the survey results may indicate some health care utilization behavior), the WHMC service area is defined as the total of the two catchment areas (BAMC & WHMC) combined. This will provide planners at Wilford Hall with the most likely number of beneficiaries who could use Wilford Hall for health care services.

Development of Survey Instrument

The survey used for this environmental assessment was developed, in coordination with appropriate approval authorities, using the 1984 DoD Health Care Survey as the main source for questions. Since the original DoD survey is much larger and broader in scope than the one developed for WHMC, many of the original questions were taken out or reworded as necessary to fit

the objectives of this survey. Prior to administration of the survey, the instrument was reviewed and approved for use by the Personnel Survey Branch, Air Force Military Personnel Center (AFMPC), Randolph AFB, TX (Appendix A) and an announcement letter was sent to each of the households included in the survey population (Appendix B). The completed survey instrument (Appendix C) has 48 questions and 154 data fields.

The contents of the survey are:

1. The cover page includes the control number and expiration date issued by the Personnel Survey Branch, AFMPC. Since this survey is already approved by AFMPC, anyone desiring to use it for their catchment area need only notify personnel at AFMPC by letter with the number of military personnel they expect to survey and the inclusive dates when the survey will be sent out. They should also reference the control number of this survey and attach a copy of the tailored version that will be used by the facility for their study. The cover page also explains the purpose and use of the survey and has the name and phone number for the point of contact in case there are any questions.

2. The introductory page explains terms used in the survey that may not be familiar to beneficiaries and

asks for general information about the size and composition of the family living in the household.

3. Section A, General Opinions about Health Care Services at WHMC, uses a six-point Likert scale, ranging from 1-strongly agree to 6-WHMC not used, to obtain information about how beneficiaries rate WHMC's ability to meet the needs of its customers. The 'WHMC Not Used' response was added as a result of the survey pre-test in an attempt to avoid confusion. Many of the individuals who filled out the survey for the pre-test remarked that someone who did not use WHMC may be confused when filling out this section and may not return the survey if they get frustrated in the beginning. Never-the-less, there were still many phone calls from respondents concerning this section of the survey.

4. Section B, Family Use of Health Care Services, asks questions concerning the number of visits made to military and civilian facilities and health insurance coverage. The questions in this section should provide insight into the general utilization of health care services (military and civilian) and help determine the 'shadow' population in San Antonio. Shadow population is a term used to describe beneficiaries who are included in the total number of potential beneficiaries

for a catchment area, but elect to receive health care services from civilian institutions. WHMC executives are interested in this number of beneficiaries because it is a factor which must be addressed when access to care is improved for clinical services. The basic assumption made by most health care administrators is that beneficiaries in the shadow population will use the military system if access is improved, otherwise they will not use the system, even it means they will have to pay for the health care services they receive from the civilian institution. Another reason for using civilian facilities is health insurance coverage and this section also includes a variety of questions on health and dental insurance. The answers provided in this section should give WHMC planners the information they need to make some generalizations about the shadow population along with basic utilization of health care services for military and civilian institutions in the greater San Antonio area.

5. Section C, Inpatient Care, covers inpatient care provided for anyone in the family and includes questions on number of days hospitalized, clinical specialty used, where care was delivered, and who paid for it.

6. Section D, Outpatient Care, addresses utilization of outpatient services. Respondents are asked a variety of questions concerning clinical specialty, length of time they waited for an appointment and waiting time in the clinic, and the type of health care facility (military or civilian).

7. Section E, Health Care Information, gives WHMC executives the opportunity to find out how beneficiaries learn about (a) the services offered by the military facility, (b) the utilization of different clinical specialties, (c) general opinions on how well care is provided, and (d) beneficiary suggestions on how to improve weak areas. The questions in this section will provide the information needed as long as the respondents elect to answer the questions. The risk of using open ended questions is that most of the people may not respond or will not write legibly. Fortunately, neither problem was encountered with this survey as evidenced by the number of responses made by the sample population and the quality of the answers provided.

8. Section F, Background Information, covers basic demographic information about the military sponsor and the zip code for the family residence.

The design of the survey and placement of answers to questions was set up to facilitate the data

collection process. Choices for questions were coded depending on the type of data being collected from the sample population. Clinical specialties for various questions were selected using the top Medical Expense Performance Reporting System (MEPRS) codes for WHMC. Other questions were added or altered from the original DoD survey to fit the type of data desired for this environmental assessment.

Validity and reliability of survey instrument

The Validity of the survey instrument is based on both content and face validity measures. Almost all of the questions used for the WHMC survey are from the 1984 DoD survey. Since this survey was developed by a leading contract firm for DoD and they are experts in survey administration, the questions they used should be valid measures of health care utilization and opinions. Permission to use the 1984 survey in whole or in part was granted verbally by LtColonel P. Worrall, Senior Health Services Researcher, Office of Health Policy and Research (HQ USAF/SGA). In addition, administrators from Wilford Hall and faculty advisors at the Academy of Health Sciences, Fort Sam Houston, Texas, reviewed the survey for technical accuracy and made comments which were incorporated into the final product.

Survey reliability was tested by administering a

pre-test of the survey to various beneficiaries in the military health care system and analyzing their responses to determine if they understood the questions and provided the type of responses desired for every question. A representative sample of the beneficiary population (active duty, active duty dependents, and retirees) used for this survey pre-test was comprised of six active duty members, three active duty dependents, and two retirees.

The results of the survey pre-test were very good. With only minor exceptions, the pre-test respondents did not have any problems reading the survey or understanding the questions. Answers to questions were the expected responses and there were few to no mistakes found in the way answers were marked on the survey. Some of the respondents did find some potential interpretation problems and duplication of wording in some questions. All of their suggestions were incorporated into the final product.

Sample Population

The sample size of the beneficiary population for this research project is 988 households (see table 10). Although this number may seem to be arbitrary, the

process used to derive this final sample size was quite exhaustive.

The percent of the population chosen for the sample was originally one percent of the total beneficiary population in the WHMC service area. One percent was selected because it was considered to be large enough for the type of research required for this project. The selection of one percent as the sample size instead of any other number was based upon discussions made with a research consultant at WHMC. One percent of the population, approximately 1,728 beneficiaries, was considered a fair sample size large enough to make generalizations about the overall population (172,752). However, one small detail in estimation of the sample size was overlooked when one percent of the beneficiary population was used as a determination of sample size: The survey was for an entire household, and would include more than one person per household. If 1,728 beneficiaries were chosen from the DEERS data base, the number of households would be much less, because a beneficiary is any person eligible for care and includes active duty members and their dependents, retirees and their dependents, and survivors of military personnel. If an arbitrary number of three people per household were used, it would mean only 576

separate sponsors would receive the survey. Since this is a much smaller number than what was originally desired, the approach for determining the sample size changed from percent of beneficiaries to total number of households that should receive the survey. For simplicity in stratifying the population between the WHMC and BAMC catchment areas, the new sample size became 1,000 households (500 from WHMC and 500 from BAMC catchment areas). This would provide for approximately 3,000 total beneficiaries (based on an estimation of three persons per household) to be covered in the surveys and was well over the original one percent considered to be an acceptable sample size.

The sample population was randomly selected by requesting a stratified listing of beneficiaries from the DEERS data base. Although the DEERS data base is the only data base available to obtain this information, it is limited in what it can provide and can cause some problems in administering the survey. The problems encountered in administering this survey are discussed later in this section.

The sample population was stratified by branch of service and beneficiary category to allow an adequate representation of each type of beneficiary served in the WHMC service area. Since the service area population

was being used, the stratified population was requested for both WHMC and BAMC catchment areas (the DEERS data base only recognizes catchment area designations, service areas must be determined by local commanders--or other appropriate authority). When the DEERS data arrived at the facility it was on a magnetic tape in ASCII binary code. The tape had to be decoded and loaded onto a mainframe computer and manipulated to turn it into a usable product. This is the first major limitation when using the DEERS data, it is not user friendly and if a small facility wanted to do this same type of research, local information systems experts on base must help with the data extraction process before it can be used.

After the address data was sorted by catchment area and beneficiary category, it was processed to identify all military sponsors and dependent spouses (living without the military sponsor) residing in San Antonio. This was done to find 500 households instead of 500 beneficiaries. When this listing was generated, another randomly selected list, stratified by beneficiary category, was requested for the WHMC and BAMC catchment areas. Five hundred households were selected from each list and put into a separate data base. This data base

was the final product that was used to send surveys out to the sample population.

The next problem encountered with DEERS occurred when the address labels were printed and used to send announcement letters out to the sample population. Addresses in DEERS are not reliable. Although the retiree addresses are more reliable than active duty sponsors, both caused some problems in maintaining an acceptable sample size for this project. Out of the original 1,000 letters and surveys sent out to the sample population, 165 were returned within two weeks as "addressee unknown." Most of them were for trainees at Lackland AFB and Fort Sam Houston who were no longer on station or for reservists still coded in the system as "active duty" due to Desert Storm deployments.

To resolve this problem, 165 additional addresses were obtained from the original DEERS tape, but for retirees only. The active duty addresses were not as reliable and all of them were for organizations without office symbols. Since the local military distribution office will not deliver mail on base without an office symbol, using active duty addresses was a waste of time. In addition, the sample size for retirees was lower than the proportion of military retirees in San Antonio in comparison to active duty members represented in the

sample. This addition of 165 households brought the total number of surveys mailed out to 1,165. The final number of 988 households was derived by subtracting the total number of letters and surveys returned as 'addressee unknown.'

Survey Administration

The steps involved in this portion of the research project included preparing an announcement letter for the WHMC commander's signature, mailing the letter out to beneficiaries in the sample population, and mailing the surveys out to the same individuals two weeks after mailing the announcement letter.

An announcement letter was used to help the response rate. If the beneficiaries know what is coming and the importance of returning the survey, they may be more inclined to participate, rather than receiving a survey in the mail without warning. The concept seemed to work as the response rate for this study was 54 percent--well above the normal response rate expected for surveys of this type (Gordon & Stokes, 1989). Although it is not known if the announcement letter was directly responsible for the high response rate, individuals wishing to replicate this study for strategic planning purposes should consider using an

announcement letter. It does not take much time and the cost is minimal compared to the amount of effort which goes into preparing a survey for mailing to the sample population.

Preparing the surveys for mailing and attaching labels on envelopes was the most time consuming process. Labels had to be put on 2,000 large, brown envelopes to send out the surveys and provide return envelopes for the respondents and 1,000 labels were attached to regular size envelopes for the announcement letter. Return labels as well as address labels were put on over 3,000 envelopes before this process was complete. After the envelopes were labeled, the base distribution office processed them for mailing. Central base funds were used to mail the surveys. To save money however, the base distribution office sent the active duty military surveys through base distribution and set up the return envelopes so payment would be made only if they were sent back. No charge was assessed for surveys that were not returned.

Surveys began to arrive at WHMC within five days after mailing. The first two weeks after the surveys were mailed yielded the most returns. After two weeks, surveys arrived in spurts and finally stopped after four to five weeks of the original mailing date.

The biggest problem with the survey administration was the number of undeliverables encountered because of bad addresses. As discussed earlier, DEERS addresses are not very reliable and this problem must be considered when using them for sending out any type of correspondence/surveys.

The final step in the survey administration process was data entry. To accomplish this in the most effective and efficient manner, a computer spreadsheet was used. Automation support is a must when compiling raw data from the surveys and use of the computer spreadsheet eased this task tremendously. The only problem encountered in the data entry process was the large amount of random access memory (RAM) required to enter data onto the spreadsheet. With 154 data fields per row and one row needed for every respondent, memory was taken up fast. Separate files, containing data on 140 respondents each, were set up to resolve this problem and were later merged into one file when the analysis of the data was performed.

Determination of Disease Incidence

The final area of research in this graduate management project determined: (a) the top 25 DRGs seen by Wilford Hall during FY89 and (b) the differences and

similarities of DRGs between WHMC and other combined DOD medical facilities (excluding WHMC catchment area beneficiaries), CHAMPUS, and the U.S. population.

Three different sources were used to obtain the data required to perform the disease incidence analysis. Disease incidence for DoD medical facilities is found in the Retrospective Case Mix Analysis System (RCMAS), a microcomputer based program available to every medical treatment facility in the DoD. Disease incidence data can be extracted from the RCMAS data base in many different ways depending on the type of study being performed. For this environmental analysis, disease incidence data was extracted for the top 25 DRGs seen by WHMC, other DoD facilities, and CHAMPUS for each beneficiary category. Disease incidence in the RCMAS data base is defined as the number of discharges for each DRG. The higher the number of discharges for each DRG, the more likely it will be one of the top 25 diseases seen by a medical treatment facility. Disease incidence for non-DoD medical facilities in the U.S. was found in two different sources: (a) Healthweek magazine and (b) Current Estimates from the National Health Interview Survey published by the Department of Health and Human Services (Diemunsch, 1991; Adams & Benson, 1990). Information found in Healthweek was easily

interpreted, however, data found in the HHS publication was not sorted by DRG and had to be categorized by the researcher into DRGs based upon the illness/injury reported in the surveys. The reliability of assigning each illness/injury to specific DRGs in this manner was tested by comparing the end product to assignments made by a highly experienced senior nurse who is also a student and resident in the Army-Baylor Graduate Program in Health Care Administration. In almost all cases the DRG assignments were identical, only minor differences required resolution. This same method of comparison (assignment of DRGs by a health care administrator and patient care provider) can be utilized by others who wish to replicate the model presented when performing an environmental analysis in their service area.

Disease incidence in Healthweek is also based upon the number of discharges reported by hospitals for each DRG. Data found in the HHS publication was determined through individual surveys and prioritized by bed days.

In the early development of this environmental analysis, disease incidence rates (number of cases/1000 people) rather than the number of discharges for each DRG and application of the disease incidence rates to a potential population in the WHMC service area was planned to be part of the analysis in this project.

After researching this subject further and determining the feasibility of performing this type of analysis, the researcher determined that reporting the top 25 DRGs, using the number of discharges as the disease incidence (rather than using disease incidence rates) and deleting the population projections from the analysis is acceptable. The purpose of this study is to perform an environmental assessment of the WHMC service area with the most accurate and easily accessible data available. The associated purpose is to develop a model for other facilities to replicate so they can also perform an environmental analysis which provides the information they need with the least amount of resource consumption and time. Converting diseases reported by various institutions into incidence rates is very time consuming and should be performed by someone with experience and knowledge in epidemiology. Determining disease incidence rates and comparing them with other geographical locations must take many different factors into consideration and, in some cases, age adjusted rates must be calculated to provide accurate data for valid and reliable comparisons. Since most commanders may not have the in-house resources to perform this type of in-depth analysis, a more logical approach was needed to provide this necessary piece of information. The

method finally used and the results and discussion that follow is the best approach found based upon discussion with strategic planners in WHMC and personal experience in researching the data necessary to complete this analysis.

One other limiting factor which was not known in the early stages of this project is the availability of data pertaining to morbidity in the U.S. and DoD. The RCMAS data base is very robust but is limited in the application of DRG data to beneficiary demographic information. Although it is possible to manipulate the RCMAS data through the use of user-friendly menus, some applications are limited in the variety of data that can be extracted from the system.

Data reported by HHS is also difficult to apply. The only document close to what a commander needs to perform a disease incidence analysis is the Health Interview Survey results reported annually for the preceding year. However, as discussed earlier, illness/injury information must be interpreted by the researcher and categorized into DRGs in order to compare the data with that which is extracted from the RCMAS data base. Although it is not extremely time consuming, this additional step must be taken before any comparisons can be made with the civilian sector. In

addition, the illness/injury portion of the report does not include chronic diseases (e.g., heart problems, gastrointestinal diseases, psychiatric care, etc.). Although there is a section in the HHS publication which addresses chronic conditions, it is not presented in a manner that allows comparison with data extracted from RCMAS.

Analysis and Comparison of Disease Incidence

The top 25 DRGs for WHMC, by beneficiary category, were compared with combined DoD facilities (excluding WHMC catchment area beneficiaries), CHAMPUS, and the U.S. population. The Results section identifies the information found and tables are provided to show a side-by-side comparison between the groups identified above. Differences and similarities between each group are analyzed in the Discussion section.

Results

Demographic Profiles

To estimate the number of beneficiaries in the Wilford Hall service area, population estimates for both Wilford Hall and Brooke Army Medical Center catchment areas are combined. Although each medical center has its own defined catchment area, beneficiaries are free to choose any military medical facility to receive treatment. Since every beneficiary in the greater San Antonio area has the potential to visit Wilford Hall for medical treatment, it is necessary to look at the total population for this demographic analysis. As discussed earlier, demographic information was derived from the RAPS data base, using 1989 population estimates. To facilitate comparison of the beneficiary population in San Antonio to the overall U.S. beneficiary population, Table 1 identifies the total U.S. beneficiary population. There are over eight million beneficiaries in the U.S. and San Antonio represents only 2.1% of that population with 172,752 beneficiaries living in the WHMC and BAMC catchment areas.

Wilford Hall USAF Medical Center Catchment Area

Table 3 shows the population estimates for this catchment area. Of the 80,363 total beneficiaries allocated to this catchment area, 15,385 are active duty

military; 23,629 are dependents of active duty; and 41,349 are retired, dependents of retired personnel, and survivors. Active duty personnel represent the smallest category of beneficiaries and dependents of active duty personnel are the largest. The total number of retired personnel and their dependents are a mirror image of the active duty personnel and dependents categories, showing a near equal split in the catchment area population between the active duty and retired beneficiary populations.

Table 4 identifies the beneficiary categories by branch of service. Note the small number of Army, Navy, and Marines in this catchment area. Almost all (94%) of the individuals in the Wilford Hall catchment area are Air Force beneficiaries. The large concentration of Air Force personnel stationed at Lackland AFB and retired personnel at Air Force Village could be one reason for this distribution of personnel in the Wilford Hall catchment area.

Brooke Army Medical Center Catchment Area

Population estimates are shown in Table 5. There are 92,389 beneficiaries in this catchment area. The active duty and dependent of active duty populations are similar to Wilford Hall with 15,203 and 26,353 beneficiaries, respectively. The retired and dependent

of retired populations are somewhat higher than Wilford Hall with 19,244 and 26,225. Survivors are also higher in number for BAMC with 5,364 beneficiaries. Unlike the WHMC catchment area population, the BAMC retired population is significantly higher than the active duty population (45,469 vs 41,556).

Table 6 identifies the beneficiary categories by branch of service for the BAMC catchment area. There is a significant difference between the distribution of personnel in the BAMC and WHMC catchment areas. The number of Army personnel accounts for only 59% of the total beneficiaries with Air Force personnel comprising 35% of the total population. This difference in representation between the two catchment areas is easily explained. Catchment area allocations are determined by geographical location and branch of service. Since there are four Air Force bases and only one Army post in San Antonio, the BAMC catchment area should have a larger proportion of Air Force personnel. However, the difference between the two catchment areas has a possible impact on the resources at WHMC and BAMC. Air Force personnel may be more comfortable using an Air Force facility and although some may be in the BAMC catchment area, they may use Wilford Hall instead of BAMC. This particular phenomenon--branch of service has

an effect on the medical facility used--was explored using data obtained from the survey administered to a sample of the greater San Antonio population. The sample population includes beneficiaries from both the WHMC and the BAMC catchment areas and the results will be covered later in this report.

Wilford Hall USAF Medical Center Service Area

To capture the true local population that may use the medical services offered by Wilford Hall Medical Center, the total population from both catchment areas is combined. Table 7 identifies the combined beneficiary populations and includes the percent of representation within each age grouping and for category totals. For the purposes of this project, the Wilford Hall service area population is used to estimate potential beneficiaries who could visit Wilford Hall for outpatient and inpatient treatment.

Active duty population. There are 30,588 active duty beneficiaries in the Wilford Hall service area. Males comprise the largest concentration of individuals with 24,140 personnel. The largest age group of males is between 25-34 years old, with the 18-24 and 35-44 age groups being about equal with over 6,000 in each age grouping. This is expected considering the age distribution in the military. The active duty

beneficiary population is only 18% of the total population in San Antonio (30,588 vs 172,752). With the exception of survivors, active duty personnel are the smallest beneficiary category.

The number of active duty males is four times larger than active duty females in the WHMC service area. This is significantly lower than the U.S. male-female comparison. Males are eight times larger than females in the U.S. active duty population (Table 7). In the WHMC service area, the largest concentration of males and females is in the 25-34 age grouping with the smallest in the 45-64 age group. This is also different than the U.S. DoD population where the largest concentration of males and females is found in the 18-24 age grouping (Table 1). The active duty population in San Antonio accounts for almost 2% of the total U.S. active duty force.

Tables 4, 6, and 8 identify the number of active duty beneficiaries by branch of service. Since San Antonio has four Air Force bases and only one Army post, it is not surprising to see a much larger number of Air Force members represented in the service area population (Table 8). In the BAMC catchment area, Air Force members account for 35% of the total active duty population (Table 6). In the WHMC catchment and service

area, Navy, Marine and other beneficiaries are minimal, accounting for only 4% of the total active duty population.

Active duty dependents. Dependents of active duty personnel in the WHMC service area (Table 7) account for 29% of the total beneficiary population and have the highest number of beneficiaries (49,982). The female population is almost two times larger than the male population, due to the large number of female spouses of active duty personnel. Male and female dependent children (ages 0-17) are similar in number, but the male children account for the highest number of beneficiaries in their category. A comparison of the U.S. population with WHMC service area for this category reveals very similar proportions in relation to the total beneficiary population. In regard to active duty dependents, WHMC service area is a good example of the total population of beneficiaries in the U.S.

When comparing the sponsor's branch of service for this category, the proportions are naturally the same as seen for the active duty population (Table 8). Since the sponsor's branch of service is the primary category for Tables 2, 4, 6, and 8, it is only logical that the dependents and retirees have similar proportions to the total population. Therefore, no further analysis is

made regarding these tables for the retiree, dependent of retiree and survivor beneficiary categories.

Retired personnel. The total retired population in the WHMC service area accounts for 20% of the beneficiaries (34,896). The number of males in the service area is 37 times higher than females (34,001 vs 895). The highest male and female concentration is found in the 45-64 age group. Retired males, ages 45-64 also account for the highest number of beneficiaries in the entire service area with 20,581 men in this beneficiary age group.

Dependents of retired personnel. This beneficiary category has the second highest number of persons out of the total population (28%, 48,327). The highest male concentration is in the 18-24 age group and the highest female concentration is in the 45-64 age group. This is surprising because the dependent children of retired sponsors should be older than active duty dependent children. Females in the 45-64 age group are the second highest number of beneficiaries in the entire service area, with 18,183 women in this category. Unlike the active duty dependent category, the female population in this beneficiary category is four times larger than the males. However, retired dependents are nearly equal to active duty dependents overall.

Survivors. This beneficiary category has the smallest representation in the WHMC service area but may account for a large portion of the health services because of the predominantly elderly population. Of the 8,959 people in this category, over 55% are over age 65. The highest male concentration is found in the 18-24 age grouping. Since most surviving spouses are women (males were the sponsors), it is not surprising to see a high number of women in this category and small number of males.

Overall service area assessment. Male and female populations are almost equal (85,438 vs 87,314). The number of people in the 45-64 age grouping account for the highest percentage of beneficiaries in each gender category and for the overall beneficiary population. The most interesting aspect of the beneficiary population is the mirror-like proportions between the male and female populations. With very minor exceptions, the proportions and actual number of males and females in each age grouping are identical. This is also seen in the total U.S. population shown in Table 1.

Comparison of DEERS Data Base to Other Personnel Data
Bases

A search for alternate sources of population data proved to be very difficult and for some beneficiary categories, almost impossible to find. Personnel offices in the Air Force use the same central data base as DEERS and do not routinely report this information. There is only one data base found (ATLAS) at the Air Force Military Personnel Center (AFMPC), Randolph AFB TX, which has population data and is not linked with DEERS. While personnel at AFMPC cannot extract the number of dependent spouses residing in San Antonio without writing an extensive program to pull the data from the personnel data base, it is possible to determine the number of active duty personnel and their children. Since it is nearly impossible to separate the number of Air Force spouses from the total number of active duty dependents in DEERS to derive a figure that represents the number of children in the service area, only a comparison of active duty figures can be performed. A comparison of the active duty figures in the DEERS data base to the personnel data base at AFMPC is found in Table 9. The results are very encouraging and validate the accuracy of DEERS as it compares to the personnel data base at Randolph AFB.

In addition to the DEERS data base, retiree population estimates for all branches of the military services can be found in the DoD Statistical Report on the Military Retirement System, a report published by the Office of the Actuary Department of Defense (RCS # DDM(A) 1375). However, the source used for this report is the Defense Manpower Data Center, the same repository of data for DEERS. Therefore, the numbers come from virtually the same data base and should be similar to those found in RAPS. The advantage of obtaining this report however, is the additional information which cannot easily be found in DEERS. The number of retirees by three digit zip code and branch of service is provided and easy to extract from the report. In addition, retiree populations are divided between officer and enlisted personnel, state and country of residence, and compensation spent for each fiscal year. This report also has information on active duty personnel and compensation estimates for every retired grade and years of service. Since this is the only report found which identifies retiree population by zip code and it is derived from the same data base as DEERS, I did not perform a comparison of the number of retirees identified by this report to the RAPS data in Tables 1 through 8.

Alternate sources of data for Army population estimates are similar to the Air Force. Medical planners at Health Services Command use DEERS data and do not normally rely on other data bases. However, at most Army installations there is a division in the Directorate of Resource Management responsible for compiling population statistics for the post and publishes a report which identifies the number of personnel assigned to the post along with other vital statistical information.

A comparison of the number of Army personnel reported by DEERS and those identified in the Fort Sam Houston Population Report is found in Table 9. Although the Fort Sam Houston report has family population data, the numbers are much different from DEERS. The number of dependents of active duty Army personnel in DEERS is 16,312 versus 8,730 reported in the Fort Sam Houston Population Report. On the other hand, the figures for the active duty and retiree populations are very similar. In DEERS, the number of active duty Army personnel is 9,377 versus 9,021 in the Fort Sam Houston Population Report. Retiree estimates are derived from the DoD Statistical Report on the Military Retirement System and should be close because the figures are derived from the same central data base.

Except for the sources of population data already mentioned earlier, there are no other data bases that can provide extensive information on the beneficiary population for a medical facility catchment/service area.

Survey Responses

Results of the Beneficiary Health Care Survey are contained in Tables 10 through 41. Out of the 1,165 surveys mailed to potential respondent households in the WHMC service area population, 177 surveys were returned by the post office (bad addresses), leaving 988 potential respondents in the sample population. At the completion of the survey administration period (15 April - 17 June 1991), 536 surveys were returned for a 54% response rate. In Table 10, WHMC Beneficiary Health Care Survey Sample Population, the 988 households are identified by beneficiary type and percent of the sample population. Survey respondents are also identified by beneficiary type with response rates for each line item.

Out of the 536 surveys returned for tabulation, nine were completely blank. The beneficiaries who returned the blank surveys explained they do not use WHMC and could not fill out the survey properly. However, since they returned the survey (although it was

blank) it was included in the response rate. Other respondents called WHMC and talked to the point of contact, stating they could not fill out a survey on WHMC because they do not receive health care services there. The respondents were then told the survey is for everyone in the greater San Antonio area and they should fill it out to give WHMC executives an idea where people obtain health care services. The nine respondents who returned the blank surveys probably did not bother to call and just returned the blank survey as a courtesy. In the future, any survey sent out to beneficiaries in the San Antonio area concerning military health care should not have WHMC or BAMC in the title, it seems to have some bias on the beneficiaries who receive it in the mail. Fortunately the number of individuals who returned completely blank surveys was low, although a number of surveys did have questions unanswered or entire pages left blank for unknown reasons.

Demographic Information on Sponsors in the WHMC Service Area that Responded to the Beneficiary Health Care Survey

Please refer to Table 11. The number of retiree households that responded to the survey is much higher than the active duty households. This is also seen in table 10 where the response rate for retirees is 58% of

the surveys sent out compared to only a 46% response rate for active duty respondents. Air Force beneficiaries are more than double the Army, with only a small number of Navy and Marine Corps beneficiaries represented. Considering the proportion of Air Force personnel (active duty and retired) in the greater San Antonio area, it is not surprising to see a greater number of Air Force beneficiaries responding to the survey. Sponsor grades are represented across the enlisted and officer ranks, with most being enlisted (active duty or retired). Only 512 respondents are represented in this table as many of the surveys returned did not have the demographic portion completed. It is possible some may have overlooked it (located on last page of the survey) and others probably intentionally left it blank to ensure anonymity.

Demographic Information for Beneficiaries in the WHMC Service Area that Responded to the Beneficiary Health Care Survey

Please refer to Table 12. This table provides a summary of the family composition for all the households participating in the survey. The mean age for sponsors and spouses is 50 and 49 years respectively. Most sponsors are males and corresponding spouses - females. Children ranged in ages from newborn (coded as 1 year

old) to 22 years old. The male-female split for all children is nearly a 50:50. The total number of beneficiaries who are reported in this section of the survey is 1,299. Since some surveys were left blank (9) and others did not complete this portion of the survey, an effort was made to determine a total number of beneficiaries represented in the sample population out of 536 households. To be conservative, only one beneficiary was allotted for each blank survey returned. Since nine were returned completely blank and 17 respondents did not complete this portion of the survey, 26 beneficiaries were added to the previous total of 1,299 for a total of 1,325 beneficiaries represented in the respondent sample population. When divided by the 536 households which received the survey, the average family size is 2.47 beneficiaries. This is very close to the recent statistics released by the Census Bureau for the San Antonio area. According to the census reports, the average family size in San Antonio is 2.8 people (Smith, 1991). The military number could be lower due to the large number of single beneficiaries (basic trainees and young military population) and retired personnel with only one or two people living in the household. When the sample population figure (2.47) is applied to the total beneficiary population in San

Antonio (172,752), the estimated number of military beneficiary households in San Antonio is 69,940.

Inpatient Care Experienced by WHMC Service Area

Beneficiaries: Military and Civilian Facilities Combined

Please refer to Table 13. The criteria for this table is found in Section C, Inpatient Care, in the survey. Out of the 527 respondents who completed the surveys, 350 reported someone in their family was admitted to a hospital while they were living in the San Antonio area. The mean age is 46 years old, with males being the predominant gender. The number of days hospitalized ranged from 1 to 365 days. The one person hospitalized for 365 days was a teenager undergoing treatment in a substance abuse center.

Location of Inpatient Care Reported by Beneficiaries in the WHMC Service Area

Please refer to Table 14. This table identifies the medical facility location for the 350 beneficiaries reporting an admission to a hospital in the survey. Willford Hall USAF Medical Center has the highest utilization (52%) with Brooke Army Medical Center placing second with 34%. Only 44 individuals stated they went to a civilian institution. Table 32 lists the

civilian institutions reported by beneficiaries for both inpatient and outpatient utilization.

Inpatient Utilization by Catchment Area and Medical Facility for WHMC Service Area Beneficiaries

Please refer to Table 15. The numbers in this table represent the result of a cross comparison of catchment area to medical facility used for inpatient care. The total does not add up to 350 due to the number of cases that dropped out when the two data fields from the survey were matched by catchment area and admitting facility. Since some respondents did not complete portions of the survey, some of the cases were lost in the matched comparison. However, this table does give a proportionate view of how the inpatient workload is distributed between the two catchment areas. It also shows a higher proportion of BAMC catchment area beneficiaries using WHMC than WHMC beneficiaries using BAMC. This same finding is seen in the disease analysis portion covered later in this environmental analysis. Beneficiaries seeking care from civilian facilities is low compared to the total number of beneficiaries represented in this table.

Inpatient Utilization of Military, Department of Veteran Affairs (VA), and Civilian Medical Facilities, by Branch of Service, for WHMC Service Area Beneficiaries

Please refer to Table 16. This table is a breakdown of admissions reported in Table 15 for each branch of service. The finding seen in this table is the preference of inpatient facility based upon the branch of service. The majority of each service's beneficiary population admitted for inpatient care used the facility operated by the sponsor's branch of service. The number of beneficiaries using civilian facilities is nearly an even split among the branches of service.

Inpatient Utilization of Military, VA, and Civilian Medical Facilities, by branch of Service, for WHMC and BAMC Catchment Area Beneficiaries

Please refer to Tables 17 (WHMC) and 18 (BAMC). These two tables provide a further breakdown of inpatient utilization by branch of service, while controlling for the catchment area of residence.

Inpatient Care Experienced by WHMC Service Area Beneficiaries: Utilization of Clinical Services at Military and Civilian Facilities

Please refer to Table 19. This table provides a listing of clinical services used by the 350 beneficiaries reporting an admission to a hospital while

living in San Antonio. General surgery was the most utilized clinical service (21 percent, 74 admissions) with obstetrics/gynecology services having the second highest utilization (52 admissions). Dental services has the lowest admission rate (one percent) despite the fact that DRG 187, Dental Extraction/ Restoration, accounted for 207 admissions in FY89. There is a possibility that survey respondents did not consider one-day admissions for dental procedures as true admissions, and consequently did not record these on the survey. Another possibility is that individuals admitted for dental procedures were not included in the survey or did not complete the survey.

Inpatient Care Experienced by WHMC Service Area

Beneficiaries: Method of Payment (Civilian and Military Facilities Combined)

Please refer to Table 20. This table identifies the method of payment used by the 350 beneficiaries who reported they were admitted to a hospital. The most frequent method of payment is the family/self category, signifying the family paid for the bill out of their own pocket. Since a high number of beneficiaries used a military facility this response is expected. Military beneficiaries only pay a subsistence rate for hospitalization and can normally pay it without any

great financial difficulty, compared to a civilian counterpart who is presented a bill for thousands of dollars for a short stay in the hospital.

Family Use of Health Care Services: Hospital Bed Days and Dental Visits

Please refer to Table 21. This table is a compilation of the answers provided for questions 6 and 7 in the survey. The data in this table represents the total number of bed days and visits for all 527 households that completed this portion of the survey and covers care provided in calendar year 1990. Questions 6 and 7 asked for only one year's worth of data as most people will not remember more than one year's worth of medical care without referring back to written records. There is a significant difference between the average bed days and dental visits for the entire respondent population and the subset population that reported a number other than "zero" for each question in the survey. The reason for reporting the subset category is to show the volume of use for beneficiaries who were admitted to a hospital or had dental care in 1990. This gives WHMC planners a better indication of the utilization of health care services and a more realistic average of how long people were in the hospital. Since this data is only for 1990, it cannot be correlated with

the data obtained from Section C, Inpatient care, which covers inpatient care for different years depending on the beneficiary answering the survey and their use of inpatient services.

Visits Reported by WHMC Service Area Beneficiaries for the Entire Family

Please refer to Tables 22 and 23. This data was obtained from questions 4 and 5 in the survey. Like the information in Table 21, this data is for the entire family and covers visits to a medical facility in 1990. Table 22 identifies data for all 527 respondents including answers equalling "zero." Table 23 excludes "zero" answers and only counts actual visits reported by beneficiaries. These two tables were constructed for the same reason bed days and visits were separated in Table 21. Having "zero" as part of the data set is important for total population usage, but does not provide a true picture of utilization for beneficiaries actually reporting visits for the past year. However, both tables are necessary to perform a comprehensive analysis of the service area population. Routine and long term care visits have the highest means with WHMC experiencing the highest number of visits as compared to other military facilities in San Antonio. Military emergency room utilization is also high with 261

households reporting usage for an average of 2.5 visits per household in 1990.

Outpatient Care Experienced by WHMC Service Area
Beneficiaries in 1990

Please refer to Tables 24 through 31. These tables provide information obtained from questions 22 through 35 in the survey. Table 24 identifies the number of beneficiaries reporting an outpatient visit for 1990. If more than one family member went to see a doctor in 1990, then the most recent visit should have been reported in the survey. Of the 527 respondents completing this section of the survey, 463 reported someone in the family saw a provider on an outpatient basis. Although most had an advanced appointment, there was still a significant number (261 out of 527 households) that used the emergency room or walk in clinic.

Table 25 lists the actual waiting time reported by the 463 beneficiaries reporting a visit in 1990 and their opinion of what the waiting time should be for an advanced appointment and how long they should wait after arrival at the clinic for their appointment (providing they arrived on time).

In Table 26 the location of care is identified for the 463 beneficiaries reporting an outpatient visit in

the survey. Fifty five beneficiaries went to a civilian facility and 408 used the military health care system. WHMC has the highest utilization, with 51% of the beneficiaries using this facility and Brooks Air Force Base Clinic is the lowest, with only 1%. Since most beneficiaries used military facilities, the source of payment information is not unusual. Those who used civilian facilities also had a wide variety of payment sources with the family/self being the most frequent.

Table 27 identifies the usage of military facilities for outpatient care in comparison to the catchment area the beneficiary lives in. WHMC catchment area beneficiaries prefer to use WHMC, while BAMC catchment area beneficiaries use WHMC and Randolph AFB as well as BAMC. This is also not surprising because military personnel stationed at Randolph AFB are in the BAMC catchment area. This could also explain the 20% utilization of WHMC by BAMC catchment area beneficiaries. It is possible that Air Force members are more comfortable visiting WHMC because it is operated by the Air Force, rather than visiting BAMC. One other reason could be the specialty services available at WHMC which are not available at BAMC. Although it is not conclusive from the data found in the surveys returned by beneficiaries, there seems to be

some correlation of facility usage based upon the branch of service of the beneficiary. This was seen in the inpatient area as well. Tables 28, 29 and 30 provide a further break down of the outpatient utilization based upon branch of service and catchment area and also indicates some evidence of facility utilization influenced by the branch of service.

Table 31 lists the reasons beneficiaries visited a provider for outpatient care and the clinical service used. Long term/chronic care was cited as the most frequent reason for obtaining outpatient care. In the clinical services area, primary care has the highest utilization with internal medicine running a close second. Mental health and flight medicine had the lowest utilization of all services reported.

Civilian Facilities Used by WHMC Service Area

Beneficiaries for Outpatient and Inpatient Care

Please refer to Table 32. This table lists the civilian facilities used by beneficiaries for both inpatient and outpatient care. Answers were obtained from questions 20 and 34 in the survey. Humana Village Oaks has the highest outpatient utilization while Northeast Baptist and McKenna hospitals have the highest inpatient utilization. Beneficiaries using these facilities could be CHAMPUS patients or part of the

elusive "shadow" population military health care administrators are continually searching for when planning new services or increasing access to the facility.

Utilization of Outpatient Clinical Services by Beneficiaries in the WHMC Service Area

Please refer to Table 33. The information in this table is a compilation of data obtained from questions 37 and 38 in the survey. Flight medicine, mental health, and pediatrics had the highest number of "votes" for services specified as "not used" by beneficiaries. The services "most used" by beneficiaries are primary care (63%), optometry (43%), and obstetrics/gynecology (37%). Utilization reported for obstetrics/gynecology (OB/GYN) and internal medicine is interesting. The percent of "no use" and "use on a recurring basis" are nearly equal, indicating a fairly even split in the population on how much these services are used or not used by beneficiaries in the household.

Reasons Why Beneficiaries Could Not Obtain Desired Health Care Services from the Military Health Care System

Please refer to Table 34. The most frequent reason cited by beneficiaries is the difficulty in obtaining an advanced appointment for outpatient care. Other reasons

provided by beneficiaries are low in number and do not appear to indicate any other findings.

Number of Times a WHMC Service Area Beneficiary Went to a Civilian Provider Because of Limited Access at a Military Treatment Facility

Please refer to Table 35. If the respondents who answered this question were not CHAMPUS patients, the number of occurrences cited in this table are high enough to warrant further exploration. Considering the number of beneficiaries who responded to this question in the survey (question 10), 25% is a high figure that deserves attention. When this proportion is applied to the overall population in San Antonio (69,940 households) it has an even greater meaning. Using a 95% confidence interval, the number of households using civilian care because of access problems into the military system can range between 15,000 and 20,000. Based on the average of 2.47 beneficiaries per household, the number of affected beneficiaries would be between 37,000 and 49,000 people. Although this is a 'worse' case scenario, it could be an indication of the potential shadow population which resides in San Antonio. They are part of the 172,752 beneficiaries, but do not always use the military health care system.

Based upon the implications posed by the information in this table, further research on this subject would be appropriate.

Medical and Dental Insurance Coverage for WHMC Service Area Beneficiaries

Please refer to Table 36. This table is a compilation of answers for question 12 in the survey. According to the data obtained from the survey, 38% of the beneficiaries in the sample population have medical insurance. If this same proportion is applied to the total military beneficiary population in San Antonio, using a 95% confidence interval, the number of military beneficiary households in San Antonio that may have medical insurance ranges between 24,000 and 29,000. This data may also be useful to resource managers responsible for the Coordination of Benefits program.

Utilization of Medical Treatment Facilities, in Relation to Insurance Coverage, for WHMC Service Area Beneficiaries

Please refer to Table 37. This table provides a matched comparison of beneficiaries who answered the health insurance question and responded to the outpatient and/or inpatient sections of the survey. Based upon data found from this comparison, individuals with medical insurance are still using military

facilities in greater proportions than civilian facilities. However, the data also provides more information for determining the potential size of the shadow population. For inpatient care, 21% of the beneficiaries with medical insurance used a civilian hospital instead of the military for care.

General Opinions About Health Care Services Provided at Wilford Hall USAF Medical Center

Please refer to Table 38. The data provided in this table is compiled from questions 3a through 3j in Section A of the survey. Responses in the last column of the survey 'WHMC Not Used' identified with a '6' for an answer are omitted from this table. If the '6's' were left in an accurate average of how patients feel about various subjects would not be possible (sixes would have influenced the average too much).

Beneficiary Comments, (Improvements, Best Services, New Services)

Please refer to Table 39. Questions 40, 41, and 42 in the survey asked the respondents for their candid opinions about how WHMC can improve, what WHMC does best, and any new services the beneficiaries would like to see offered by WHMC in the future. This table lists the most frequent answers provided by beneficiaries. Many responses were paraphrased for the purpose of

reporting the data in a usable format. Parking and improvements in the appointment system were the most frequent responses given.

Methods of Obtaining Health Care Information for
Beneficiaries in the WHMC Service Area

Please refer to Table 40. This table lists the sources of information beneficiaries use to obtain information about health care services in San Antonio. The most disturbing piece of information found as a result of this section of the survey is the number of beneficiaries who do not receive health care information (148). However, it is also comforting to see the number of beneficiaries who are reading the base newspaper and using the handbook/ brochures provided.

Delta Dental Participation and Beneficiary Awareness of
WHMC Refill Pharmacy

Please refer to Table 41. The number of beneficiary households that reported participation in the Delta Dental Plan is only 86, or 16% of the sample population that responded to the survey. However, considering the high number of retirees who responded to the survey this low number should be expected (since retirees are ineligible). There were a number of retirees who wanted to know more about the Delta plan and wanted to join. Unfortunately, they probably did not

read the definitions in the first part of the survey that explained what the plan was and who was eligible.

Since the refill pharmacy was just opened this year, WHMC executives were curious to find out how many beneficiaries were aware that it was open and, at the same time, spread the word through the survey that this new service was available. Out of 527 beneficiary households that responded to this survey, 42% knew the refill pharmacy was open, but only 20% knew the phone number to call for advanced pharmacy orders. Since the phone numbers were listed in the survey for beneficiaries to see and use, it is possible that more people will use the refill pharmacy as a result of this low cost marketing effort.

Disease Incidence

Disease incidence information is found in Tables 42-57. In this section of the environmental assessment, disease incidence is determined by the number of discharges experienced by WHMC, other DoD facilities, CHAMPUS, and other U.S. hospitals. Disease incidence data extracted from the Department of Health and Human Services (HHS) is prioritized by the number of bed days reported by respondents for various illnesses/injuries.

Wilford Hall USAF Medical Center Beneficiaries

Patients seen in WHMC are from the WHMC catchment area, BAMC catchment area, other DoD catchment areas and the greater San Antonio civilian community (civilian emergencies are brought to WHMC's Level I emergency room). Three different sets of tables are presented to discuss the top 25 DRGs for WHMC: (a) Tables 44-46 identify all patients seen in WHMC based upon the catchment area they live in; (b) Table 42 is a listing of all WHMC patients combined, by beneficiary category, without reference to catchment area residence; and (c) Table 43 lists the top 25 DRGs for all patients in aggregate.

Wilford Hall catchment area beneficiaries seen at Wilford Hall. In Table 44, the top 25 DRGs for each beneficiary category in the WHMC catchment area are identified. Active duty patients have a wide range of DRGs, but almost all of them are acute conditions, not chronic, some of which are unique to the military health care setting. To someone not familiar with the military health care environment, it may be surprising to see DRG 187 (Dental Extractions/Restorations) and DRG 421 (Viral Illness > 17) as the top two DRGs. However, many active duty patients are single and have no one to take care of them and because this data includes patients placed on

quarters (quarters patients are admitted but care for themselves at home; they do not occupy a bed in the facility), it seems unusual for military hospitals to have these two DRGs at the top of the list. Table 50 verifies this finding, with two of the top three DRGs being DRGs 187 and 421 for all active duty personnel seen in DoD medical facilities.

DRGs for dependents of active duty personnel are predominantly for females, although some pertain to children. DRGs in this beneficiary category range from delivery of babies being the two highest (DRG 391, Normal Newborn, and DRG 373, Vaginal Delivery without complicating diagnoses) to Tonsillectomies/Adenoidectomies (DRG 60) and Otitis Media and Upper Respiratory Infections (DRG 70) being two of the lowest.

In the retired beneficiary population, the DRGs are more chronic conditions and depict an older group of patients, with many DRGs identifying life threatening illnesses that are not seen in the active duty and dependent of active duty populations. The underlying characteristic in the retired beneficiary population is chronic care, with longer lengths of stay and higher level of acuity than the active duty and dependent of active duty patients. As one might expect, the DRGs seen for the retired population are very close to those

identified in Table 52, which identifies the top 25 DRGs for U.S. hospitals (Medicare patients only). Since most Medicare patients are over age 65, and a proportion of the WHMC retired population is over age 65, it should not be surprising to see some correlation between the two tables for this patient category.

The dependents of retired personnel/others category is the most interesting of the four beneficiary categories identified. In this beneficiary category, a wide range of DRGs are seen with most pertaining to female disorders and chronic conditions seen in an aging population. Unlike the dependent of active duty DRG listing, conditions pertaining to children are not seen. This is not surprising as most children of retired personnel are either ineligible for care (because of their age) or they are healthy and do not need inpatient care on a frequent basis. The most interesting DRG seen in this beneficiary category is DRG 468, Unrelated Operating Room Procedures. Although it is also found in the other three beneficiary categories, the highest number of patients are found in the dependents of retired personnel category. Since this is a miscellaneous DRG used for many different diagnoses, it is difficult to determine why the number is so high. One explanation could be that most DRGs in this beneficiary

category relate to surgical conditions and the probability of DRG 468 being assigned to patient conditions in the dependent of retired personnel category is higher than other categories. However, without reviewing each patient record, only mere speculation can explain why it is the highest DRG for this beneficiary category.

Brooke Army Medical Center catchment area beneficiaries seen at WHMC. Table 45 identifies the number of patients seen at WHMC who are living in the BAMC catchment area. Based upon the number of patients seen at Wilford Hall from the Brooke Army Medical Center catchment area, the reason for admission to WHMC is speculated to be limited services at BAMC compared to WHMC, patient acuity, or patient preference. The strongest argument for patient preference is in the dependent of active duty category where DRG 391, Normal Newborn, and DRG 373, Vaginal Delivery without complicating diagnoses, are the two highest DRGs and account for 24 and 20 percent, respectively, of the total number of patients seen in WHMC (see Tables 43 and 45). Considering BAMC has an obstetrics service and the two DRGs are not unique to either medical facility, patient preference could be a reason why so many patients from the BAMC catchment area have their babies

at WHMC. Travel distance may be a factor, but shouldn't because overlapping zip codes for WHMC and BAMC represent nearly an equal distance from each facility. Since a high number of patients fall into this category, more research as to why this condition exists may be of interest to planners in WHMC.

All other beneficiary categories and associated DRGs for BAMC catchment area beneficiaries seen at WHMC do not appear unusual or inconsistent with the type of patients seen at a large tertiary medical treatment facility.

Beneficiaries from other DoD catchment areas seen at Wilford Hall. The overall characteristic of DRGs seen in Table 46 are chronic, life threatening illnesses /injuries that are referred to WHMC because of its worldwide referral mission. DRG 467, Other Factors Influencing Health, is the number one DRG for active duty and dependents of active duty beneficiaries and is the second highest for retired personnel. Considering the variety of conditions falling under DRG 467, it is not surprising to see this DRG at the top of the list for patients transferred to WHMC for treatment/ observation. Other DRGs for each beneficiary category are indicative of those expected for patients transferred to a worldwide referral center for care. The

proportionately low number of dependents of active duty, retired, and retired dependents/other beneficiary categories compared to active duty beneficiaries is probably a result of active duty personnel being sent through the aeromedical evacuation system (aerovac) to WHMC versus being seen through CHAMPUS within their own catchment area. Although some dependents are sent through the aerovac system to WHMC for more definitive treatment, most are probably issued non-availability statements from their primary military health care facility and are sent to civilian facilities. With the growth of the managed care concept and an impetus to decrease CHAMPUS dollars, this is one area that WHMC planners should consider researching when developing the strategic plan. It is conceivable that the number of patients sent to WHMC from other catchment areas could increase, thereby increasing the chronically ill patients in WHMC, causing more resource expenditures without reimbursement. In the current military health care system, WHMC does not receive patient specific reimbursement for resources consumed by patients transferred from other catchment areas except for the subsistence rate charged to all patients. If the number of patients sent to WHMC increases due to initiatives to decrease CHAMPUS expenditures, WHMC should seek an

equitable reimbursement from the referring military treatment facility.

Wilford Hall catchment area beneficiaries seen at other health care facilities. The number of beneficiaries reported under this category is very low and in some cases not worth mentioning. There will always be patients in a catchment area seen elsewhere for a variety of reasons, with one being patient preference, which is extremely difficult to influence or measure. Based upon the DRGs identified in Tables 47-49 for each beneficiary category, the reasons for not being seen in WHMC can only be explained after reviewing patient charts or examining the availability of services at WHMC at the time the patients were seen outside WHMC.

One significant finding in Tables 45 and 47 is the disproportionate number of patients seen at BAMC from the WHMC catchment area compared to the number of patients seen from the BAMC catchment area at WHMC. When comparing the numbers identified in the two tables, it is evident that WHMC sees a higher number of BAMC catchment area beneficiaries in comparison to the number of WHMC catchment area beneficiaries seen at BAMC.

WHMC beneficiaries seen through CHAMPUS also identifies one significant finding that may warrant more

extensive research. In Table 49, the number of discharges for almost all DRGs is unremarkable, except for the top three DRGs in the dependent of active duty and dependent of retired personnel beneficiary categories. Psychiatric services purchased through CHAMPUS is a topic currently under discussion by policy makers in congress and OASD(HA) and is certainly a factor at WHMC. For both beneficiary categories identified in Table 49, mental health disorders (DRGs 4XX) occupy the top three DRGs and account for 58 percent of the total number of discharges for both beneficiary categories combined. These DRGs are clearly candidates for further exploration of where care is delivered and whether it can be done more economically through partnership agreements or by contract, rather than issuing a non-availability statement and sending the patient to the civilian sector for care.

Beneficiaries from Other DoD Catchment Areas and Comparisons with the WHMC Beneficiary Population

Tables 50-53 identify the top 25 DRGs for military beneficiaries seen throughout DoD, CHAMPUS, and for the general population in the U.S.. Tables 54-57 compare WHMC beneficiaries with aggregate population groups. DRGs that are similar between each beneficiary category are in bold type.

Top twenty five DRGs for DoD beneficiaries treated in DoD medical facilities (excluding WHMC catchment area beneficiaries). Please refer to Table 50. DRGs for beneficiaries treated in DoD medical facilities worldwide are almost identical to those seen at WHMC. This should not be surprising considering the wide range of diseases/ injuries treated at WHMC. A comparison of DRGs seen for all DoD medical facilities (by beneficiary category) and those seen at WHMC are identified in Table 54. Results of this comparison are discussed later in this report.

Top twenty five DRGs for DoD beneficiaries treated through CHAMPUS (excluding WHMC catchment area beneficiaries). Please refer to Table 51. The finding seen in this table reflects the same characteristics seen in Table 44. Patients in each beneficiary category have unique problems that are characteristic of their beneficiary status. Dependents of active duty personnel are seen for female disorders, psychiatric problems and childhood illnesses. Retirees experience chronic conditions which are more life threatening and debilitating in nature. Dependents of retired personnel/others are a mix of female disorders, chronic conditions, and life threatening illnesses, with some psychiatric services.

For a comparison of DRGs between DoD beneficiaries seen through CHAMPUS and WHMC beneficiaries seen through CHAMPUS, please see Table 55.

Twenty five most frequent DRGs, ranked by Medicare inpatient discharges, for patients treated in U.S. hospitals. Although the information contained in Table 52 is only for Medicare patients, it is appropriate to compare the DRGs listed here to those seen at WHMC for retired and dependents of retired personnel/survivors/others. Please refer to Table 56 for a comparison of the national DRG listing and those seen at WHMC.

Twenty five most frequent illnesses for the U.S. population, ranked by beddays. Please refer to Table 53. As discussed in the Methods and Procedures section of this environmental assessment, illnesses and injuries experienced by the general public in the U.S. were categorized into associated DRGs. Some illness/injuries have many different possibilities depending on the severity of the illness/injury, the age of the patient, and other complicating diagnoses. For a comparison of the DRGs identified in this table to those in Table 43, please refer to Table 57.

Comparison of the top twenty five DRGs for WHMC patients and DoD beneficiaries (excluding WHMC catchment area beneficiaries). Please refer to Table 54. When comparing WHMC to DoD beneficiaries worldwide, WHMC beneficiaries are experiencing the same DRGs in every beneficiary category with only minor exceptions. In the active duty population, there are eight DRGs in the WHMC and DoD listings that do not match. In the DoD active duty population, the first five DRGs account for a significantly higher number of discharges than the other 20 identified. These same DRGs are also responsible for a high number of discharges at WHMC, but are not all at the top of the list for WHMC patients. The differences between the two groups (WHMC and DoD) range from DRG 398, Immunity Disorders > 69 and/or complications, to DRG 225, Foot procedures. The DRGs that do match are not in the same order according to dispositions, but this is probably an insignificant difference because of the small numbers seen by WHMC compared to DoD. DRG 467, Other Factors Influencing Health, is one example of the difference. This DRG has the highest number of dispositions for WHMC, but is ranked 14th for DoD beneficiaries. The reason for this difference is found in Table 46. DRG 467 is the number one DRG for active duty patients seen in WHMC who are not in the

WHMC catchment area, meaning they are referred to WHMC from other medical treatment facilities. Since there are fewer medical centers in DoD than community hospitals and clinics, the incidence of DRG 467 is lower than other DRGs that all medical facilities have the potential to experience.

In the dependent of active duty beneficiary category, 18 DRGs match in the top 25 DRG listings for WHMC and DoD. The first two, DRGs 391, Normal Newborn, and 373, Vaginal Delivery without complicating diagnoses, are an exact match, accounting for the highest number of dispositions in both WHMC and DoD populations. Other DRGs that match between the two groups are also very similar. DRGs which do not match between the two groups range from DRG 55, Miscellaneous Ear/Nose/Throat, to DRG 374, Vaginal Delivery with sterilization.

A comparison of DRGs for retirees and their dependents between WHMC and other DoD medical facilities also reveals a strong similarity between the two groups. Differences in DRGs seen at WHMC and those at other DoD facilities can probably be attributed to WHMC being a tertiary facility, with a concentration of DRGs which are associated with a large medical center. With the exception of DRG 112, Other Vascular Procedures, found

in the WHMC retired population as the third highest disposition and not found in the DoD population, all other differences between WHMC and DoD are unremarkable.

Comparison of the top twenty five DRGs for WHMC catchment area beneficiaries and DoD beneficiaries (excluding WHMC catchment area beneficiaries) seen through CHAMPUS. Please refer to Table 55. A comparison of DRGs between WHMC beneficiaries and DoD beneficiaries seen through CHAMPUS reveals a very strong difference between the two groups. The first observation noted is the very small number of patients sent through CHAMPUS in the WHMC catchment area and the proportionately larger number of beneficiaries using CHAMPUS at other locations in the U.S. Obstetrics is the highest service utilized through CHAMPUS for dependents of active duty personnel throughout DoD and psychiatric services is the highest for WHMC. Although some psychiatric services are identified in the DoD population, they are not as predominant, with respect to total CHAMPUS care, as they are within the WHMC catchment area. In the retired and dependents of retired personnel categories, the differences are also clearly identifiable. DoD beneficiaries use CHAMPUS for a wide range of medical conditions whereas WHMC beneficiaries are seen for psychiatric services with only a very small

number sent

outside WHMC for other medical conditions. Since WHMC is the one of the largest medical treatment facilities in DoD, it is not surprising to see the differences identified in this table.

Comparison of the top twenty five DRGs for WHMC patients (retired and dependents of retired personnel) and Medicare patients seen in U.S. hospitals. Please refer to Table 56. A comparison of WHMC data with Medicare is not entirely accurate because of the age differences in the two groups (WHMC retired and dependent of retired beneficiaries age 65+ equate to only 12% of the service area population and the majority of Medicare patients are over age 65). However, a comparison of the two groups should not be discarded. Trends seen in the civilian sector will also affect military medicine and it is important to compare Wilford Hall with the Medicare population to identify any significant differences or similarities.

Comparison of the top twenty five DRGs for WHMC patients and the general public in the U.S. reported by HHS from the National Health Interview Survey. Please refer to Table 57. There are only a few DRGs that match in the WHMC and general public populations. The main reason for the lack of similarity between the two

populations has to do with how the HHS National Health Interview Survey collects data and presents it. All of the illnesses/injuries listed in Table 57 for the HHS DRG listing are acute conditions. Chronic conditions are covered in the publication but are not in a format that will allow comparison of the data to WHMC DRGs. However, it is important to review this data and compare it to DRGs seen at WHMC to identify any trends in the civilian sector which may warrant further research for the WHMC service area population.

Discussion

Demographic Analysis

Based upon the data found in the demographic profile, several important pieces of information were revealed that have a significant impact on the potential resource consumption at Wilford Hall USAF Medical Center. The process used to collect the demographic data also validated the accuracy of the DEERS data base, indicating its usefulness for the environmental assessment portion of the strategic plan.

Combining two catchment areas (e.g., BAMC & WHMC) is the most reliable and valid method to use when there is more than one MTF within the 40 mile catchment area. Without the help of a beneficiary health care survey or other data collection instrument at every clinic and admissions desk, executives have no way of knowing who is seeking care from their facility or if their patients are from their own catchment area. Although future plans by OASD(HA) call for beneficiaries to enroll with specific providers, it may still be difficult to direct beneficiaries to seek care from only one institution when more than one facility is available.

The demographic data for the Wilford Hall service area has several implications for executives to consider

when configuring resources for health care delivery at Wilford Hall.

1. The proportion of active duty, active duty dependents, retirees, retiree dependents, and survivors for the WHMC service area is very similar to the total U.S. beneficiary population. This allows executives to forecast with some degree of accuracy, the potential population for the service area. Although the military will experience significant downsizing within the next five to ten years, it is very likely the proportions will remain the same. With this similarity in populations, it will be easier to determine the population in San Antonio based upon the total U.S. beneficiary population. However, medical planners at WHMC will also have to consider any significant changes in mission at every military installation in San Antonio along with characteristics of the retiree and active duty dependent populations.

2. The equality of numbers and age grouping between the male and female beneficiary categories is something to consider before any new product lines are introduced (e.g., women's wellness center). The demographic profile does not provide enough data to come to a conclusion that one gender may respond better to a new product line than another.

3. The DMIS data base (updated by DEERS) is the best source of information for medical planners to use in determining the number of beneficiaries who reside in the catchment/service area. Although there are other sources of information available, the ease of obtaining the data cannot compete with DMIS. The DMIS/DEERS data base provides information on the entire catchment area by gender and age grouping as a standard product. Other data bases do not provide this same level of information. When compared with other data bases, DEERS figures are very reliable and valid. Except for the number of active duty Army dependents, DEERS figures were very close to other sources of information. Considering the time and effort involved in searching for alternate sources of data and the easy access to DEERS data, the logical choice of data bases to use is DMIS. The reliability of DEERS is also influenced by the Air Forces' procedures for updating the system through the personnel system. If someone is not entered into the personnel system, they will not exist in DEERS. Since this is virtually impossible, everyone in the Air Force is enrolled in DEERS. However, it is possible for dependents to not be counted, but is very unlikely since all dependents must be enrolled in DEERS after becoming eligible.

4. The high number of beneficiaries over age 45 will require WHMC planners to consider the needs of retirees equal to those of the active duty population. Although care for retirees has been provided on a space-available basis in the past, the new mission description for the Air Force Medical Service changes this priority system. Now and in the future, if the local MTF commander cannot provide care for beneficiaries in the military facility, then care must be arranged for the beneficiary by MTF personnel. This is part of the coordinated care concept and will play an important part in how military facilities plan for care into the year 2000. Considering the large proportion of retirees and dependents of retirees in the San Antonio area, medical care will always be a very important social and political issue.

The demographic analysis provides an important piece of information needed by medical planners during the strategic planning process. However, it will not provide all the information needed to complete a comprehensive plan for the medical facility. Now that WHMC executives know how many people are in their service area and the breakout of this population by age and gender, they must determine the utilization behavior of the population and the incidence of disease

in order to plan the resources required to deliver or arrange health care for all beneficiaries within their catchment/service area.

Beneficiary Health Care Survey

Information obtained from the survey indicates many different findings and pieces of information which were previously unknown to WHMC executives. In addition, the survey results validate a number of assumptions about the health care behavior of beneficiaries in the WHMC service area. Finally, based upon the response rate for this survey and the representation for each beneficiary category, generalizations about the overall WHMC beneficiary population are possible using the results of this survey (Gordon & Stokes, 1989).

Demographic Profile of the Sample Population

The stereotypical military beneficiary family in the sample population has a 50 year old male sponsor and 49 year old female spouse. They have one child around nine years old who could be male or female. The sponsor is probably retired although some will still be on active duty. Variations of this typical beneficiary family will exist but most will fit this description based on the answers provided by survey respondents.

Sponsors and their spouses range in age from 18 to

89 years of age. Based upon the average age for each, WHMC providers can expect to see more chronic conditions associated with individuals over 45 years of age.

Although the range includes sponsors and spouses between those ages, the data seems to lean toward an older, more senior population. This is probably due to the large retiree population in San Antonio and also the higher proportion of retiree households which responded to the survey.

Children in the WHMC service area have an average age starting at 12 for the oldest child and 2 for the youngest. Most families with sponsors between 18 and 50 years of age had at least one child, with most having two. Gender is not a factor to consider with children in the WHMC service area, as each child category has nearly a 50:50 split of males to females. A small number of families (5) had a dependent older than the sponsor and spouse.

The average number of beneficiaries per household (2.47) is very close to the San Antonio average of 2.8 people per household (Smith, 1991). Reasons for the lower number of people per household for the military population can probably be attributed to the high number of retirees living in San Antonio without children. This assumption is supported by the utilization of clinical

services reported by survey respondents. In Table 33 pediatrics received a 65% 'no use' response even though there are a number of survey respondents who have children living at home. The low number of children in relation to sponsors and spouses, shown in Table 12, also supports the assumption that many of the retiree families do not have children living at home. The implications of this information have a direct impact on the desirability of maintaining a pediatric service in WHMC.

Given the fact that the survey population is an accurate representation of the overall WHMC service area beneficiary population, the utilization of pediatrics by the entire population is extremely low. Although the results of this survey are not conclusive, more research on the utilization of pediatrics is indicated and should be pursued.

Inpatient Care

Of the 527 households that completed the inpatient portions of the survey, 66% indicated at least one person in the family was hospitalized while the family was living in San Antonio. Although the year of admission ranges from 1955 to 1991, 80% of the family members indicated the admission occurred within the past five years. The average military beneficiary

admitted for inpatient care was a 46 year old male who stayed in a military hospital for 11 days. The average age and gender for hospitalization corresponds well with the average age and gender for military sponsors in the sample population (Table 12). Wilford Hall USAF Medical Center is the facility of choice. One hundred eighty four beneficiaries (52%) indicated they received their care from WHMC. BAMC and civilian institutions accounted for 34% and 13%, respectively, of the patients admitted.

The results of the inpatient portion of the survey clearly show WHMC as the primary military MTF in San Antonio. Not only do WHMC catchment area beneficiaries prefer Wilford Hall over BAMC, but many of the beneficiaries in the BAMC catchment area also use WHMC. Branch of service may have some influence on this and is expected given the high number of Air Force members in San Antonio. However, WHMC is also the largest medical facility in the Air Force and has a wide range of specialties. Beneficiaries in San Antonio may use WHMC simply because it is the only military treatment facility in the area which provides the clinical specialties they require. Given the finding that most beneficiaries will use WHMC over BAMC regardless of the catchment area of residence, there are serious

resource considerations which must be addressed in the strategic plan.

Although WHMC is primarily responsible for only the beneficiaries in the WHMC catchment area, having BAMC in the same geographical area with overlapping catchment area boundaries is a factor that must not be overlooked. Beneficiaries in San Antonio prefer WHMC for one reason or another and plans for the future must include allowances for this unique situation. At a minimum, WHMC and BAMC executives must coordinate plans for the future and incorporate current findings into realistic allocation of medical resources for the San Antonio area. WHMC and BAMC are not in competition with one another and should work together for the best economies of scale based upon the needs and demands of the entire beneficiary population served. The child/ adolescent psychiatry initiative is only the beginning. Other clinical services must be reviewed along with the preferences for health care services of the beneficiaries to find the most efficient and economical approach for health care delivery in San Antonio. The results of this survey can serve as a baseline, but more research and trend analysis is required before any radical changes are made to the current system.

The most predominant finding found in Table 19

validates the assumption that more chronic conditions (long hospital stays) are being treated than acute conditions (short hospital stays). Cardiology, general surgery, internal medicine, and OB/GYN are the most frequent services used by survey respondents requiring inpatient care. With the exception of OB/GYN, the others are all associated with long hospital stays and very ill patients.

Family Use of Health Care Services

The results of this section of the survey provide a number of important facts which are extremely useful for planning purposes. In Table 21, the average beddays and dental visits are low for the entire population, but the percentage of families reporting beddays and visits has some importance. The average military beddays of nine days (for 25% of the sample population) indicates a high use of inpatient resources. Civilian beddays are even higher with an average of 25 days for 7% of the sample population. If some of those hospitalizations were covered by CHAMPUS, the corresponding costs have to be high.

The number of beneficiary households reporting dental visits is interesting. Half the population used a military facility and the other half went to a civilian dentist for treatment. In some cases, both a

military and civilian dentist were visited by members in the same family. This information, coupled with the demands for new services by beneficiaries covered in another section of the survey (Table 39), indicates a strong need for increased dental care for beneficiaries in the San Antonio area. Although retirees are on a space available basis, the need exists and possible solutions should be examined before this finding is disregarded.

Outpatient visits for the entire family for 1990 reveal a high utilization of outpatient services by 80% of the sample population (Table 23). Most used a military facility, but a high number of beneficiaries also used civilian providers. The most interesting finding in this table concerns the utilization of emergency room resources by the sample population. Out of 527 respondent households, 261 (50%) reported at least one visit to the emergency room in 1990. Of the 261 households reporting a visit, the average number of visits per household is almost 3 visits for military facilities and 2 visits for civilian institutions. Although inconclusive, the data may indicate beneficiaries experience a frustration with receipt of care through the normal appointment system. Opinions expressed in Table 38 reenforce this finding,

therefore, to identify access barriers, this should be explored further.

Outpatient Care

The difference between the findings in this section and the preceding one centers around the criteria set in the survey. The 'Family Use of Health Care Services' section concerned the entire family where the Outpatient Care section pertains to a visit experienced by one member in the family. According to the directions in the survey, the most recent visit experienced by a family member in 1990 should be reported in this section.

Out of the 527 households responding to this section of the survey, 88% required outpatient care. There is no preference toward gender and almost 80% of those requiring care had an advanced appointment (Table 24). The waiting time experienced by beneficiaries indicates some correlation with the utilization of emergency room resources where 37% of the beneficiaries reporting a visit indicated they did not wait for an appointment (Table 25). The only reliability problem here is the correlation of the waiting time results in Table 25 and method of access information in Table 24. In Table 24, 98 beneficiaries indicated they did not need an appointment. However, in Table 25, 170 answered they did not wait for an appointment. It is possible

they did not understand the question or they received same day appointments. Although many beneficiaries complain about the long waiting time for some appointments, only 43 people, 9% of the sample population reporting a visit in this section of the survey, indicated they waited over 30 days for an appointment.

When the individual reported to a clinic for care, the waiting time to see a provider ranged from 1 to 45 minutes or longer. Thirty one percent had to wait over 25 minutes for a provider and this is considered too long based upon the desired waiting time specified by the same beneficiaries. Out of the 463 beneficiaries reporting a visit in this section, 431 (93%) indicated they would wait up to 25 minutes for a provider. Reduction of the actual waiting time to equal the desired waiting time is the goal providers should strive to meet.

The finding seen in the inpatient care area pertaining to facility preference is also found in the outpatient utilization figures derived from this survey. BAMC has a higher number of beneficiaries in its catchment area, but sees a lower percentage of them compared to WHMC. In Table 27, only 6% of WHMC catchment area beneficiaries went to BAMC, whereas 20% of BAMC

catchment area beneficiaries came to WHMC. In addition, another 15% of BAMC catchment area beneficiaries used Randolph AFB clinic and 17% used a civilian facility. When all of these percentages are combined, BAMC only treated 44% of the beneficiaries in its catchment area compared to WHMC treating 80% of the beneficiaries in its catchment area plus 20% from the BAMC catchment area. In light of these findings, utilization of outpatient resources between WHMC and BAMC deserves close scrutiny and more in-depth exploration.

Reasons for outpatient care reflect national characteristics. Of 463 beneficiaries, 160 (34%) indicated they required care for chronic or long term conditions. One interesting finding was the low number of beneficiaries citing pregnancy or psychiatry as a reason for outpatient care. Differences in the interpretation of this question by the respondents could explain the variance. Primary care and internal medicine were cited as the most frequent clinical services used. All other clinical services were evenly distributed with emergency medicine the only one above nine percent.

Utilization of Civilian Facilities and Health Insurance
Coverage for WHMC Service Area Beneficiaries

Table 32 is a listing of the medical facilities cited by beneficiaries as their source of care. Considering the large number of respondents in this survey, the number of beneficiaries using a civilian facility is comparatively low. Only 55 beneficiaries reported using a civilian facility for outpatient care and 44 for inpatient care. Some of them could be the same person in both groups making the number even smaller. There does not seem to be a preference for any one facility as most medical facilities in the greater San Antonio area are identified. Village Oaks (outpatient), Northeast Baptist, and McKenna hospitals (inpatient) have the highest number of beneficiaries using their facilities and they are not much more than the others.

The beneficiaries represented in this table could be part of the shadow population referred to earlier in this report or are CHAMPUS patients. They are part of the beneficiary population, and we know they exist, but where they obtain their health care services is unknown unless we ask them (using surveys or personal interviews). Knowing the size of the shadow population is important, but knowing the reason why they use

civilian sources instead of military facilities is even more important. It could be quality of care, access, continuity of care (seeing the same provider for every visit), or maybe just personal preference. Insurance coverage may also be a reason for using one source over another. Whatever the reason, military planners should explore this area carefully and make their own conclusions based upon the data they collect.

In the WHMC service area population it appears there are individuals who fit the criteria for being in the shadow population. Unfortunately, the results of only one survey are not enough to form any conclusions. At least three years of data (directed at utilization of health care resources by beneficiaries) should be collected and analyzed before any firm conclusions are made. However, the data found as a result of this survey does provide a baseline and gives WHMC executives some insight into how large the shadow population may be. Even if some of the patients received care through CHAMPUS, it does provide a 'worse' case picture of what may be happening in the service area. Based upon the figures identified in the tables for inpatient and outpatient care at civilian facilities and using a 95% confidence interval, the potential size of the shadow population in the WHMC service area is between 5,175 and

8,812 households for inpatient care and between 3,987 and 7,203 for outpatient care. Using the average family size of 2.47 the range of beneficiaries for inpatient care is between 12,782 and 21,765 and between 9,848 and 17,793 for outpatient care. The figures used to compute these ranges are reported in Table 32. Fifty five beneficiaries reported they went to a civilian facility for outpatient care and 44 for inpatient care. Since some of the beneficiaries may be the same for both columns (received both inpatient and outpatient care at a civilian facility) the ranges identified above should be considered a rough estimate and are probably a little higher than the actual shadow population residing in the WHMC service area.

The usefulness of information about the shadow population is only limited by the imagination of the WHMC planning staff. It can be used to estimate the increased number of visits they can expect to receive if a new service is opened with unlimited access. It can also be used to open opportunities for partnerships and sharing agreements with other providers. Knowing the preferences of all the beneficiaries in the WHMC service area, WHMC executives can allocate resources more in

line with what is actually needed, rather than what is perceived by the staff.

Information found in Tables 34 and 35 provides some insight into why some beneficiaries seek care outside the military health care system. As shown in Table 34, 205 (40%) of the beneficiary households in the sample population stated they could not receive health care because it was too difficult to get an appointment. This corresponds somewhat with the information in Table 35. Out of 523 respondents, 170 (33%) of the beneficiary households reported they had to use a civilian facility because of access problems into the military health care system. If WHMC planners want to decrease the size of the shadow population in the service area, they need to work on access into the system. This is also validated by the opinions provided by beneficiaries in Section E of the survey. When asked what WHMC should improve, the beneficiaries' most frequent response concerned the appointment system. If beneficiaries can not enter the system they will seek care elsewhere and the results of this survey validate that assumption.

Insurance coverage is another factor receiving a lot of attention within the military health care sector. Efforts are currently underway to capture the insurance dollars for beneficiaries admitted to a military

hospital in an attempt to reimburse facilities with insurance dollars to decrease the budget. Before the results of the survey were known it was also thought that insurance coverage could have a strong correlation with civilian facility utilization and provide more information on the shadow population. Unfortunately, based upon the answers provided by beneficiaries in the sample population, insurance coverage is not a strong factor to consider.

Table 36 provides an extensive profile of how many beneficiary households had medical and dental insurance, who is covered, the source of payment, and type of insurance. Out of 527 households responding to this survey, 202 (38%) of them indicated they had some form of medical insurance and 100 (19%) had dental insurance. In some cases beneficiaries had both medical and dental insurance. Although it is not known how many individuals had health insurance three to five years ago, the percentage of military beneficiaries with health insurance is higher than what was expected. Care in the military health care system is relatively free. Military beneficiaries should not need to purchase health insurance and this benefit is a strong argument used by recruiters when a potential enlisted or officer candidate considers entry into the military.

Unfortunately, decreased budgets, increased demand on health care resources, and a growing retiree population have taxed the military health care system, adversely affecting access into the system and resulting in many beneficiaries looking elsewhere for care.

Health insurance coverage is not just Medicare and CHAMPUS supplemental either. One hundred ten of the 202 respondents indicated they have private insurance and most of them pay for it out of their own pocket. Retirees are the most bitter about the apparent erosion of health care benefits. When asked for their candid opinions on what changes or suggestions they can offer, many cited the problems associated with being a retiree and having to use military facilities on a 'space available' basis. Interestingly enough, active duty beneficiaries complain of retirees clogging up the system and that they (active duty personnel) should have the higher priority in receiving care. It would be interesting to see if the number of beneficiaries having health insurance increases in the future. This information is also extremely useful for personnel in the Coordination of Benefits Program and can be used to estimate the most likely number of beneficiaries who will have health insurance and the corresponding amount

of money the military facility has the potential to collect based upon these estimates.

The most interesting finding concerning health insurance and beneficiary health care behavior is found in Table 37. One might expect to see a strong correlation between beneficiaries with medical insurance and civilian facility utilization. Based upon the results found in this survey, there is not a strong correlation between the two. Only 22% of the beneficiaries with health insurance used a civilian facility for outpatient care and only 21% used a civilian facility for inpatient care. In both instances, military facilities were used more frequently and in greater proportions than civilian institutions. One explanation for the weak correlation could be the reason why beneficiaries purchased their health insurance. Although this was not covered in this survey, it may have something to do with catastrophic or long term care. Military facilities are not meant to be long term care facilities and can not be in the future if they expect to live within the decreased budgets they receive for delivery of health care services to beneficiaries in their catchment areas. Beneficiaries know this, they see the decreased access to facilities and want to be prepared. Therefore, they buy health

insurance, but do not use it unless they absolutely have to, because they do not want to pay the copayment or deductible when they still may have a chance to be seen by a military provider. It will be interesting to see the affect the Coordination of Benefits Program has on this assumption. If beneficiaries are made to pay the deductible and copayment even when they are admitted to a military facility it may change their preference.

Health insurance coverage, and the percent of beneficiaries in a catchment area with coverage, is important information that military health care executives must know when developing their strategic plan. In regard to the WHMC service area, the number of beneficiaries having health insurance should be tracked in future years to see if it increases, decreases, or stays the same.

Beneficiary Opinions About Wilford Hall USAF Medical Center

Tables 38 and 39 validate many of the assumptions WHMC executives have about the beneficiary population. One reassuring aspect of the information found in Table 38 is the high number of beneficiaries who are generally satisfied with the care they receive and have a positive attitude about WHMC in almost all areas. Findings in this table also validate many of the other findings

described elsewhere in this report. For example, a high number of beneficiaries indicated parking is a problem. This was also indicated in the write-in portion of the survey under areas where WHMC needs to improve (see Table 39). One other example concerns the use of military facilities. Results from other areas of the survey indicate a relatively low use of civilian facilities in the San Antonio area and Question 31 (of the survey) also indicates low use of civilian facilities.

Information presented in Tables 38 and 39 gives WHMC executives valid arguments for improving services in some areas and leaving others as they are. It is also a positive indicator that the entire staff at WHMC is making a positive impression on the beneficiary population and further emphasizes that the motto "people who care" for WHMC is an appropriate description of the corporate culture.

The final area of discussion pertains to the sources beneficiaries use to obtain health care information about military facilities in San Antonio. Although most have some structured form of receiving information, an alarming 148 out of 536 (28%) of the respondents indicated they have not received any information. Beneficiaries need up to date and accurate

information on the services available at every military facility in San Antonio and what they should do if services are not available. A number of the comments provided in Section E of the survey also indicate that some beneficiaries do not know what services are already available at the military facilities or what procedures to follow to gain access. Educating beneficiaries should receive a high priority by WHMC executives and providers.

Analysis of Disease Incidence

The results of the disease incidence research offers several pieces of information which validates assumptions made about the patient population at Wilford Hall Medical Center and provides new information which was previously unknown. Before this environmental assessment was performed, planners could only speculate how different or similar the patient populations are in WHMC when compared to other facilities in DoD and civilian hospitals in the U.S. Information concerning disease incidence for Medicare patients, CHAMPUS, and the general public in the U.S., in comparison to WHMC, brings a new perspective on the various DRGs WHMC could

experience if trends in the civilian sector continue to influence the military health care system.

Wilford Hall USAF Medical Center Top Twenty Five DRGs

As stated in the Results section, diseases and injuries treated at WHMC do not differ significantly from those experienced throughout DoD. The demographic composition of the WHMC service area is 50% active duty (including dependents) and 50% retiree (including dependents), and the DRGs for WHMC indicate a clear split between acute conditions which are associated with persons between 20 and 45 years of age, and life threatening, chronic illnesses which are associated with individuals over 45 years of age. Unless the population in San Antonio drastically changes (e.g., downsizing of the military force and an increase of retired population), WHMC can expect to see the same DRG utilization in the future for each beneficiary category listed in Table 42. This is validated by the DRG utilization in other DoD medical facilities and the demographic mix of active duty/retiree beneficiaries in the U.S. (Table 1).

As mentioned in the demographic portion of the Results section, the WHMC and Continental United States (CONUS) beneficiary population proportions are very similar. Based on the DRG mix for WHMC and DoD,

population demographics may have some predictability in the types of DRGs a medical facility will experience. Although this predictability is not statistically tested, the findings for both WHMC and DoD in each beneficiary category lean toward making this assertion about DRG utilization in relation to demographic mix. The nature of DRGs seen for each beneficiary category also provides a basis for the argument of predictability as most DRGs have age parameters and are historically associated with certain populations (e.g., young people do not normally receive cardiac catheterizations or lens procedures on the eye). Therefore, the split population (50% active duty and 50% retiree) in the WHMC service area should and does indicate a similar split in DRGs. If the population in the WHMC service area significantly changes, then this relationship between DRGs and demographic mix should be applied to determine the possible resource consumption the medical center may experience based upon the change in the beneficiary population.

Wilford Hall Catchment Area Beneficiaries Treated
Outside Wilford Hall

Two previously mentioned noteworthy items are seen in Tables 47-49: (a) The disproportionate low number of WHMC patients seen at BAMC in relation to the high

number of BAMC patients seen at WHMC and (b) the high incidence of DRG 4XX for patients treated by CHAMPUS providers.

Although BAMC may have limited/insufficient services in some clinical specialties as compared to WHMC, there is a strong argument for facility preference based upon the sponsor's branch of service. Please refer to Tables 16-18 (inpatient) and 28-30 (outpatient). Based upon data obtained from the Beneficiary Health Care Survey, Army and Air Force beneficiaries seem to prefer to use the facility operated by their branch of service even though they live in a different catchment area.

Psychiatric care is a clinical specialty that WHMC planners should discuss when formulating the strategic plan. The DRGs listed in Table 49 clearly indicate a high use of psychiatric services by WHMC catchment area beneficiaries and account for 58 percent of the total discharges for all patients seen through CHAMPUS.

Although there is an initiative to start a Child/Adolescent Psychiatric service at WHMC and BAMC, additional steps should be taken to negotiate services for the adult population. Other DRGs in this table do not indicate any significant findings.

Comparison of WHMC DRGs with DoD Beneficiaries Treated

Through CHAMPUS and Medicare Patients Seen in U.S.
Hospitals

Please refer to Tables 55. DRGs for patients utilizing CHAMPUS in the WHMC catchment area are much different than those for DoD beneficiaries. However, this was expected. Beneficiaries in Wilford Hall's catchment area should not need to use CHAMPUS as often because WHMC is a tertiary medical facility. The most significant difference is seen in the comparison of the top five DRGs for active duty dependents in the WHMC and DoD beneficiary populations. While psychiatric services comprise the top five DRGs for WHMC catchment area beneficiaries in the active duty dependent category, pregnancy related DRGs comprise four out of the top five DRGs for DoD dependent of active duty beneficiaries. This difference is probably due to the varying availability of military medicine at other locations in the U.S. Unfortunately, all DoD beneficiaries do not live near a military treatment facility, or they are assigned to a base/post with only a small clinic or hospital.

The differences between the retired and dependents of retired beneficiary categories in WHMC and DoD are similar but more subtle than those of the dependents of active duty. Psychiatric services still account for the

highest number of dispositions, but the difference between WHMC and DoD beneficiaries is not as profound as seen with the dependent of active duty population.

In the DoD dependent of retired/survivor/other category, DRG 430, Psychoses, accounts for the highest number of dispositions and is significantly higher than all other DRGs except DRG 391, Normal Newborn. Another interesting finding in this beneficiary category is DRG 391, Normal Newborn. There is a significantly higher number of dispositions in this DRG than the associated obstetrics DRG-DRG 373, Vaginal Delivery without complicating diagnoses. Although there is not enough data to research this, it may be worth the effort to explore this further in another study.

The final comparison in this study concerns the similarities and/or differences found between the beneficiary population in the WHMC service area and patients treated in the civilian sector. Although the comparisons are not altogether conclusive about the incidence of disease between WHMC and the rest of the world, it does provide important information for development of the strategic plan.

It is important to know the characteristics of the civilian sector and compare them with WHMC because the DRGs found in civilian hospitals will more than likely

be seen in military hospitals too. DoD beneficiaries are susceptible to the same illnesses and injuries experienced by the general population. A comparison of the two groups (Table 56) may indicate a trend that WHMC planners did not consider or determine as important. Differences found between WHMC and the Medicare population indicate a greater concentration of chronic illnesses in Medicare and a wider variety of DRGs for WHMC patients. Due to the composition of the two populations this was expected and the differences are easy to explain. Most of the DRGs found in the WHMC population concern illnesses associated with younger females and unique conditions treated at WHMC because it is a worldwide referral center for DoD. For example, DRG 435, Substance Dependence, Detoxification and/or other symptomatic treatment, is found at WHMC because it is one of DoD's substance abuse centers in the U.S.. Medicare patients may be treated for this DRG, but it does not fall within the top 25 DRGs for the entire country. The most noteworthy difference between the two populations is DRG 39, Lens Procedures with/without Vitrectomy, and DRG 140, Angina Pectoris. DRG 39 has the second highest dispositions for WHMC but is not found in the top 25 DRGs for Medicare. In a similar circumstance, DRG 140 has the second highest

dispositions for Medicare, but is not found in the top 25 DRGs for WHMC. Unfortunately, without more information these differences cannot be explained.

There are also some similarities between the two groups which validate the assertion that the military patient population is not much different than their civilian counterpart. The most significant similarity found between both populations is the presence of cardio-vascular related diseases and DRG 410, Chemotherapy. However, the most important piece of information found as a result of this comparison is not from the similarities found but from the DRGs in the Medicare population that are not in the top 25 listing for WHMC. The DRGs found in the Medicare top 25 listing that are not in the WHMC listing could be the DRGs which WHMC executives can expect in the future as a result of the growing retiree population and increased life expectancy. If the retiree population increases in the greater San Antonio area, the incidence of DRGs found in the Medicare population will probably occur in greater frequency at WHMC.

Summary

This environmental assessment is only the beginning of the strategic planning process for Wilford Hall USAF Medical Center. It also provides a model for WHMC to use for future assessments needed to track changes in the environment. Downsizing the military active duty force, increasing numbers of retirees moving to San Antonio, and changes in the DoD health care system will affect the resources WHMC will require to deliver health care in the greater San Antonio area.

The uniqueness of San Antonio having four Air Force bases and one major Army post will always have an affect on health care resources. Until beneficiaries are directed to seek care from only one type of facility (military or civilian), health care utilization behavior will be an important piece of information.

Administration of a survey instrument is the most logical method to capture data and should be administered every year or so to a stratified sample of the population. When the survey is administered, consideration should be given to include both the BAMC and the WHMC catchment area beneficiaries. This assessment reveals that beneficiaries in San Antonio appear to prefer the facility operated by their own branch of service and catchment area designation does

not seem to have any influence. Technically, WHMC is only responsible for beneficiaries in the WHMC catchment area. However, the results of this environmental assessment indicate this is unrealistic and all beneficiaries who live in the greater San Antonio area must be considered as part of the WHMC service area.

Finally, knowing the top 25 diseases treated by the providers in WHMC and comparing them with other facilities will allow executives to position themselves appropriately in response to characteristics seen in the DoD and civilian health care delivery systems. Analysis of disease through DRGs also provides a meaningful data base for utilization review/management which was previously unavailable.

The model presented in this report (Figure 1) is not only useful for Wilford Hall USAF Medical Center, but can also be used by any MTF in the DoD Health Care System. Demographic data is readily available from the DEERS data base, with a few minor editorial changes the survey used for this assessment can easily become a beneficiary health care survey for any geographical location in the U.S., and the RCMAS data base provides the necessary data for performing an analysis of diseases treated by the medical facility.

References

- Abramson, J. H. (1984). Survey methods in community medicine (3rd ed.). Edinburgh: Churchill Livingstone
- Adams, P.F., & Benson V. (1990). Current estimates from the National Health Interview Survey. National Center for Health Statistics. Vital Health Stat, 10(176).
- Atlas Statistical Summary [Computer program]. (1991). Randolph AFB, TX: Air Force Military Personnel Center, Field Activities Management Division.
- Bradburn, N. M., & Sudman, S. (1979). Improving Interview method and questionnaire design. San Francisco: Jossey-Bass.
- Brown, H. L., & Brown, K. C. (1989). Strategic planning. AAOHN Journal, 37, 284-5.
- Cartwright, A. (1983). Health surveys in practice and in potential: A critical review of their scope and methods. London: King's Fund.
- Costello, M. M. (1989). Strategic planning and tactical execution: A military perspective. Hospital Topics, 67(6), 23-4.
- Dahlmann, J. (1991). Fort Sam Houston population report. Fort Sam Houston, TX: Headquarters, Fifth United States Army, Directorate of Resource Management.

Defense Eligibility Enrollment System (DEERS) [Computer program]. (1989). Falls Church, VA: Defense Medical Information System (DMIS).

Diemunsch, J. (1991). Desktop resource. Healthweek, 5(8), 20.

Environmental Assessment Workbook. (1989). Chicago: American Hospital Publishing, Inc.

Finnegan, L., & Ervin, N. E. (1989). An epidemiological approach to community assessment. Public Health Nursing, 6, 147-151.

Flexner, W. A., Berkowitz, E. N., & Brown, M. (1981). Strategic planning in health care management. Rockville: Aspen.

Folger, J. C. (1990). Strategic plans provide lasting solutions to rural crisis. Healthcare Financial Management, 44(4), 25-6, 28-30.

Gordon, S. E., & Stokes, S. A. (1989). Improving response rate to mailed questionnaires. Nursing Research, 38, 375-6.

Griffith, J. R. (1987). The well-managed community hospital. Ann Arbor: Health Administration Press.

Health care survey. (1984). Washington, DC: Department of Defense.

- Lorenz, E. W., & Jones, M. K. (1989). The Air Force physician's DRM working guidebook. Washington, DC: St. Anthony Hospital Publications.
- Martin, A. (1988). Community assessment: the cornerstone of effective marketing. Pediatric Nursing, 14(1), 50-53.
- Mausner, J. S., & Kramer, S. (1985). Epidemiology an introductory text (2nd ed.). Philadelphia: W.B. Saunders.
- Pegels, C. C., & Rogers, K. A. (1988). Strategic management of hospitals and health care facilities. Rockville: Aspen.
- Retrospective Case Mix Analysis System (RCMAS) [Computer program]. (1989). Falls Church, VA: Military Health Services System, Defense Medical Information System (DMIS).
- Schultz, P. R., & Magilvy, J. K. (1988). Assessing community health needs of elderly populations: comparison of three strategies. Journal of Advanced Nursing, 13, 193-202.
- Smith, G. B. (1991, July 5). Structure of San Antonio households remodeled. The San Antonio Light, pp. A1, A14.

United States Air Force Fact Sheet. (1990). Wilford Hall
USAF Medical Center. San Antonio: Wilford Hall USAF
Medical Center Public Affairs Office.

U.S. Department of Health and Human Services. (1980).
Report of the national committee on vital and health
statistics (DHHS Publication N. (PHS) 81-1160).
Washington, DC: U.S. Government Printing Office.

Webber, J. B., & Peters, J. P. (1983). Strategic
thinking new frontier for hospital management.
Chicago: American Hospital Publishing, Inc.

Welch, N. M. (1988). Benefits of a community needs
assessment. American Journal of Public Health, 78,
850-1.

Table 1

Total DoD Beneficiary Population in the United States by Age and Gender

Gender	Age Group	Active Duty	%	Active Duty Dependent	%	Retired	%	Retired Dependent	%	Survivor	%	TOTAL	%
Male	0-4	0	0.0%	279,755	32.4%	0	0.0%	14,368	4.1%	3,433	9.3%	297,556	6.8%
	5-14	0	0.0%	423,017	49.0%	0	0.0%	119,806	34.6%	13,353	36.1%	556,176	12.7%
	15-17	0	0.0%	71,190	8.2%	0	0.0%	84,851	24.5%	6,273	17.0%	162,314	3.7%
	18-24	687,858	44.3%	53,099	6.1%	3,914	0.2%	120,206	34.7%	10,523	28.5%	875,600	20.0%
	25-34	561,863	36.2%	23,197	2.7%	21,612	1.4%	3,194	0.9%	991	2.7%	610,857	14.0%
	35-44	262,735	16.9%	8,455	1.0%	156,725	10.0%	1,482	0.4%	729	2.0%	430,126	9.8%
	45-64	39,882	2.6%	3,831	0.4%	920,283	58.4%	1,281	0.4%	867	2.3%	966,144	22.1%
	65+	0	0.0%	1,165	0.1%	472,558	30.0%	1,361	0.4%	800	2.2%	475,884	10.9%
	Subtotal	1,552,338	35.5%	863,709	19.7%	1,575,092	36.0%	346,549	7.9%	36,969	0.8%	4,374,657	100%
Female	0-4	0	0.0%	269,110	15.0%	0	0.0%	13,716	0.9%	3,461	1.2%	286,287	7.4%
	5-14	0	0.0%	407,982	22.7%	0	0.0%	116,903	7.5%	12,656	4.3%	537,541	13.9%
	15-17	0	0.0%	74,555	4.1%	0	0.0%	82,274	5.3%	6,200	2.1%	163,029	4.2%
	18-24	88,485	45.9%	321,950	17.9%	447	2.2%	123,107	7.9%	14,073	4.8%	548,062	14.2%
	25-34	80,114	41.6%	457,128	25.4%	2,326	11.6%	37,415	2.4%	8,334	2.8%	585,317	15.1%
	35-44	22,317	11.6%	219,597	12.2%	2,821	14.1%	191,290	12.2%	14,697	5.0%	450,722	11.7%
	45-64	1,846	1.0%	43,623	2.4%	6,034	30.2%	752,405	48.2%	109,686	37.2%	913,594	23.6%
	65+	0	0.0%	3,876	0.2%	8,373	41.9%	245,516	15.7%	125,926	42.7%	383,691	9.9%
	Subtotal	192,762	5.0%	1,797,821	46.5%	20,001	0.5%	1,562,626	40.4%	295,033	7.6%	3,868,243	100%
Grand Total		1,745,100	21.2%	2,661,530	32.3%	1,595,093	19.4%	1,909,175	23.2%	332,002	4.0%	8,242,899	100%

Note 1. Data is extracted from the Defense Medical Information System, FY89 Population Report.

Note 2. The "%" column is the percentage of beneficiaries represented in each age group and category.

Table 2

Total U.S. Beneficiary Population by Sponsor Branch of Service

Sponsor Service	Active		Active Duty		Retired		Retired		Survivor		Total	
		%	Dependent	%		%	Dependent	%	/Other	%		%
Army	584,366	33.5%	969,363	36.4%	528,761	33.1%	614,598	32.2%	132,568	39.0%	2,829,656	34.3%
Navy	302,545	17.3%	431,385	16.2%	395,498	24.8%	464,723	24.3%	76,481	23.0%	1,670,632	20.3%
Navy Afloat	213,632	12.2%	237,552	8.9%	0	0.0%	0	0.0%	0	0.0%	451,184	5.5%
Air Force	438,985	25.2%	755,086	28.4%	556,023	34.9%	691,312	36.2%	95,528	28.8%	2,536,934	30.8%
Marines	166,515	9.5%	206,173	7.7%	88,294	5.5%	107,031	5.6%	18,884	5.7%	586,897	7.1%
Other	39,057	2.2%	61,971	2.3%	26,517	1.7%	31,511	1.7%	8,541	2.6%	167,597	2.0%
Total	1,745,100	21.2%	2,661,530	32.3%	1,595,093	19.4%	1,909,175	23.2%	332,002	4.0%	8,242,900	100.0%

Note 1. Data is extracted from the Defense Medical Information System, FY89 Population Report.

Note 2. The "%" column is the percentage of beneficiaries represented in each age group and category.

Table 3

Wilford Hall USAF Medical Center Catchment Area Beneficiaries by Age and Gender

Gender	Age Group	Active Duty		Active Duty Dependent		Retired		Retired Dependent		Survivor		TOTAL	
			%		%		%		%		%		%
Male	0-4	0	0.0%	2,322	28.7%	0	0.0%	132	3.2%	37	10.7%	2,491	6.2%
	5-14	0	0.0%	3,927	48.5%	0	0.0%	1,294	31.2%	120	34.6%	5,341	13.3%
	15-17	0	0.0%	730	9.0%	0	0.0%	994	24.0%	55	15.9%	1,779	4.4%
	18-24	4,141	34.1%	544	6.7%	18	0.1%	1,601	38.6%	99	28.5%	6,403	16.0%
	25-34	4,803	39.5%	366	4.5%	85	0.6%	56	1.4%	14	4.0%	5,324	13.3%
	35-44	2,818	23.2%	131	1.6%	1,278	8.3%	20	0.5%	9	2.6%	4,256	10.6%
	45-64	399	3.3%	60	0.7%	9,720	63.4%	31	0.7%	9	2.6%	10,219	25.5%
	65+	0	0.0%	17	0.2%	4,221	27.5%	20	0.5%	4	1.2%	4,262	10.6%
	Subtotal	12,161	30.3%	8,097	20.2%	15,322	38.2%	4,148	10.4%	347	0.9%	40,075	100%
Female	0-4	0	0.0%	2,255	14.5%	0	0.0%	141	0.8%	26	0.8%	2,422	6.0%
	5-14	0	0.0%	3,672	23.6%	0	0.0%	1,271	7.1%	120	3.7%	5,063	12.6%
	15-17	0	0.0%	756	4.9%	0	0.0%	947	5.3%	64	2.0%	1,767	4.4%
	18-24	1,269	39.4%	2,244	14.4%	1	0.3%	1,597	8.9%	191	5.9%	5,302	13.2%
	25-34	1,471	45.6%	3,833	24.7%	21	6.4%	376	2.1%	74	2.3%	5,775	14.3%
	35-44	455	14.1%	2,307	14.9%	52	15.8%	2,135	11.9%	116	3.6%	5,065	12.6%
	45-64	29	0.9%	428	2.8%	175	53.0%	8,644	48.1%	1,076	33.1%	10,352	25.7%
	65+	0	0.0%	37	0.2%	81	24.5%	2,843	15.8%	1,581	48.7%	4,542	11.3%
	Subtotal	3,224	8.0%	15,532	38.6%	330	0.8%	17,054	44.6%	3,248	8.1%	40,288	100%
Grand Total		15,385	19.1%	23,629	29.4%	15,652	19.5%	22,102	27.5%	3,595	4.5%	80,363	100%

Note 1. Data is extracted from the Defense Medical Information System, FY89 Population Report.

Note 2. The "%" column is the percentage of beneficiaries represented in each age group and category.

Table 4

Wilford Hall USAF Medical Center Catchment Area Beneficiary Population bySponsor Branch of Service

Sponsor Service	Active		Active Duty		Retired		Retired		Survivor		Total	%
	Active	%	Dependent	%	Retired	%	Dependent	%	/Other	%		
Army	121	1%	415	2%	251	2%	411	2%	93	3%	1,291	2%
Navy	393	3%	491	2%	545	3%	792	4%	124	3%	2,345	3%
Navy Afloat	0	0%	145	1%	0	0%	0	0%	0	0%	145	0%
Air Force	14,625	95%	22,290	94%	14,600	93%	20,469	93%	3,285	91%	75,269	94%
Marines	245	2%	263	1%	206	1%	367	2%	47	1%	1,128	1%
Other	1	0%	25	0%	50	0%	63	0%	46	1%	185	0%
Total	15,385	100%	23,629	100%	15,652	100%	22,102	100%	3,595	100%	80,363	100%

Note 1. Data is extracted from the Defense Medical Information System, FY89 Population Report.

Note 2. The "%" column is the percentage of beneficiaries represented in each age group and category.

Table 5

Brooke Army Medical Center Catchment Area Beneficiaries by Age and Gender

Gender	Age Group	Active Duty	%	Active Duty Dependent	%	Retired	%	Retired Dependent	%	Survivor	%	TOTAL	%
Male	0-4	0	0.0%	2,298	24.9%	0	0.0%	172	3.5%	23	4.7%	2,493	5.5%
	5-14	0	0.0%	4,415	47.8%	0	0.0%	1,540	30.9%	142	29.2%	6,097	13.4%
	15-17	0	0.0%	979	10.6%	0	0.0%	1,210	24.3%	89	18.3%	2,278	5.0%
	18-24	3,063	25.6%	853	9.2%	19	0.1%	1,895	38.0%	176	36.2%	6,006	13.2%
	25-34	4,390	36.6%	399	4.3%	168	0.9%	70	1.4%	23	4.7%	5,050	11.1%
	35-44	3,771	31.5%	195	2.1%	1,749	9.4%	40	0.8%	13	2.7%	5,768	12.7%
	45-64	755	6.3%	82	0.9%	10,861	58.1%	24	0.5%	9	1.9%	11,731	25.9%
	65+	0	0.0%	16	0.2%	5,882	31.5%	31	0.6%	11	2.3%	5,940	13.1%
	Subtotal	11,979	26.4%	9,237	20.4%	18,679	41.2%	4,982	11.0%	486	1.1%	45,363	100%
Female	0-4	0	0.0%	2,179	12.7%	0	0.0%	173	0.8%	15	0.3%	2,367	5.0%
	5-14	0	0.0%	4,207	24.6%	0	0.0%	1,586	7.5%	148	3.0%	5,941	12.6%
	15-17	0	0.0%	947	5.5%	0	0.0%	1,152	5.4%	76	1.6%	2,175	4.6%
	18-24	1,054	32.7%	2,486	14.5%	3	0.5%	1,829	8.6%	184	3.8%	5,556	11.8%
	25-34	1,432	44.4%	3,729	21.8%	31	5.5%	523	2.5%	93	1.9%	5,808	12.4%
	35-44	682	21.2%	2,833	16.6%	92	16.3%	2,493	11.7%	187	3.8%	6,287	13.4%
	45-64	56	1.7%	666	3.9%	208	36.8%	9,539	44.9%	1,437	29.5%	11,906	25.3%
	65+	0	0.0%	69	0.4%	231	40.9%	3,948	18.6%	2,738	56.1%	6,986	14.9%
	Subtotal	3,224	6.9%	17,116	36.4%	565	1.2%	21,243	45.2%	4,878	10.4%	47,026	100%
Grand Total		15,203	16.5%	26,353	28.5%	19,244	20.8%	26,225	28.4%	5,364	5.8%	92,389	100%

Note 1. Data is extracted from the Defense Medical Information System, FY89 Population Report.

Note 2. The "%/" column is the percentage of beneficiaries represented in each age group and category.

Table 6

Brooke Army Medical Center Catchment Area Beneficiary Population by
Sponsor Branch of Service

Sponsor Service	Active Duty				Retired				Survivor		Total	%
	Active	%	Dependent	%	Retired	%	Dependent	%	/Other	%		
Army	9,256	60.9%	15,897	60.3%	10,888	56.6%	14,598	55.7%	3,732	69.6%	54,371	58.9%
Navy	551	3.6%	665	2.5%	1,072	5.6%	1,206	4.9%	225	4.2%	3,809	4.1%
Navy Afloat	0	0.0%	234	0.9%	0	0.0%	0	0.0%	0	0.0%	234	0.3%
Air Force	5,293	34.8%	9,300	35.3%	6,827	35.5%	9,751	37.2%	1,245	23.2%	32,416	35.1%
Marines	89	0.6%	205	0.8%	386	1.9%	476	1.8%	85	1.6%	1,221	1.3%
Other	14	0.1%	52	0.2%	91	0.5%	104	0.4%	77	1.4%	338	0.4%
Total	15,203	16.5%	26,353	28.5%	19,244	20.8%	26,225	28.4%	5,364	5.8%	92,389	100%

Note 1. Data is extracted from the Defense Medical Information System, FY89 Population Report.

Note 2. The "%" column is the percentage of beneficiaries represented in each category.

Table 7

Wilford Hall USAF Medical Center Service Area Beneficiaries by Age and Gender

Gender	Age Group	Active Duty	%	Active Duty Dependent	%	Retired	%	Retired Dependent	%	Survivor	%	TOTAL	%
Male	0-4	0	0.0%	4,620	26.7%	0	0.0%	304	3.3%	60	7.2%	4,984	5.8%
	5-14	0	0.0%	8,342	48.1%	0	0.0%	2,834	31.0%	262	31.5%	11,438	13.4%
	15-17	0	0.0%	1,709	9.9%	0	0.0%	2,204	24.1%	144	17.3%	4,057	4.7%
	18-24	7,204	29.8%	1,397	8.1%	37	0.1%	3,496	38.3%	275	33.0%	12,409	14.5%
	25-34	9,193	38.1%	765	4.4%	253	0.7%	126	1.4%	37	4.4%	10,374	12.1%
	35-44	6,589	27.3%	326	1.9%	3,027	8.9%	60	0.7%	22	2.6%	10,024	11.7%
	45-64	1,154	4.8%	142	0.8%	20,581	60.5%	55	0.6%	18	2.2%	21,950	25.7%
	65+	0	0.0%	7	0.2%	10,103	29.7%	51	0.6%	15	1.8%	10,202	11.9%
	Subtotal	24,140	28.3%	17,334	20.3%	34,001	39.8%	9,130	10.7%	833	1.0%	85,438	100%
Female	0-4	0	0.0%	4,434	13.6%	0	0.0%	314	0.8%	41	0.5%	4,789	5.5%
	5-14	0	0.0%	7,879	24.1%	0	0.0%	2,857	7.3%	268	3.3%	11,004	12.6%
	15-17	0	0.0%	1,703	5.2%	0	0.0%	2,099	5.4%	140	1.7%	3,942	4.5%
	18-24	2,323	36.0%	4,730	14.5%	4	0.4%	3,426	8.7%	375	4.6%	10,858	12.4%
	25-34	2,903	45.0%	7,562	23.2%	52	5.8%	899	2.3%	167	2.1%	11,583	13.3%
	35-44	1,137	17.6%	5,140	15.7%	144	16.1%	4,628	11.8%	303	3.7%	11,352	13.0%
	45-64	85	1.3%	1,094	3.4%	383	42.8%	18,183	46.4%	2,513	30.9%	22,258	25.5%
	65+	0	0.0%	106	0.3%	312	34.9%	6,791	17.3%	4,319	53.2%	11,528	13.2%
	Subtotal	6,448	7.4%	32,648	37.4%	895	1.0%	39,197	44.9%	8,126	9.3%	87,314	100%
Grand Total		30,588	17.7%	49,982	28.9%	34,896	20.2%	48,327	28.0%	8,959	5.2%	172,752	100%

Note 1. Data is extracted from the Defense Medical Information System, FY89 Population Report.

Note 2. The "%" column is the percentage of beneficiaries represented in each age group and category.

Note 3. The WHMC Service area represents a combination of both the WHMC and BAMC catchment areas.

Table 8

Wilford Hall USAF Medical Center Service Area Beneficiary Population bySponsor Branch of Service

Sponsor Service	Active Duty				Retired				Survivor		Total	%
	Active	%	Dependent	%	Retired	%	Dependent	%	/Other	%		
Army	9,377	30.7%	16,312	32.6%	11,139	31.9%	15,009	31.1%	3,825	42.7%	55,662	32.2%
Navy	944	3.1%	1,156	2.3%	1,617	4.6%	2,088	4.3%	349	3.9%	6,154	3.6%
Navy Afloat	0	0.0%	379	0.8%	0	0.0%	0	0.0%	0	0.0%	379	0.2%
Air Force	19,918	65.1%	31,590	63.2%	21,427	61.4%	30,220	62.5%	4,530	50.6%	107,685	62.3%
Marines	334	1.1%	468	0.9%	572	1.6%	843	1.7%	132	1.5%	2,349	1.4%
Other	15	0.0%	77	0.2%	141	0.4%	167	0.3%	123	1.4%	523	0.3%
Total	30,588	17.7%	49,982	28.9%	34,806	20.2%	48,327	28.0%	8,959	5.2%	172,752	100%

Note 1. Data is extracted from the Defense Medical Information System, FY89 Population Report.

Note 2. The "% " column is the percentage of beneficiaries represented in each category.

Table 9

Comparison of DEERS Data Base to Other Personnel Data Bases in San Antonio

DEERS vs. AFMPC Data Base				
Beneficiary Category	DEERS	AFMPC	+/-	% Diff
AD Air Force	19,918	20,057	-139	-0.7%
DEERS vs. Fort Sam Houston Population Report				
Beneficiary Category	DEERS	Pop Report	+/-	% Diff
AD Army	9,377	9,021	356	3.8%
AD Army Depn	16,312	8,730	7582	46.5%
Army Retired	11,139	11,537	-398	-3.6%
Ret Depn/oth	18,834	17,306	1528	8.1%

Note 1. AFMPC data obtained from the Atlas Statistical Summary [Computer program]. (1991). Randolph AFB, TX: Air Force Military Personnel Center (AFMPC), Field Activities Management Division.

Note 2. Fort Sam Houston population data extracted from the Fort Sam Houston Population Report, 29 March 1991.

Note 3. DEERS data is for FY89 and data from AFMPC and Fort Sam Houston is FY91, therefore, some differences are expected.

Table 10

WHMC Beneficiary Health Care Survey Sample Population

Stratified Sample Population		
Beneficiary	Number of Households	Percent of Sample
Active Duty	361	36.5%
National Guard	5	.5%
Reserve	12	1.2%
Retired	542	55.0%
Survivors/Other	68	6.8%
Total	988	100.0%

Survey Respondents		
Beneficiary	Number of Households	Response Rate
Active Duty	166	46%
National Guard	1	20%
Reserve	1	8%
Retired	322	58%
Survivors/Other	24	35%
Unknown	22	---
Total	536	54%

Note 1. For this study, a stratified, random sample was extracted from the WHMC and BAMC catchment area population. The sample population contains 500 beneficiaries from the WHMC catchment area and 500 beneficiaries in the BAMC catchment area. The two catchment areas combined form the WHMC service area.

Note 2. The response rate is the percent of the sample population that responded to the survey within each beneficiary category; eg. 166 out of 361 or 46% of the active duty households surveyed responded. Surveys returned because of bad addresses were not included in the final sample population. Out of 1,165 surveys mailed, 177 were returned because of bad addresses, leaving 988 potential respondents for this study.

Table 11

Demographic Information on Sponsors in the WHMC Service Area that
Responded to the Beneficiary Health Care Survey

Military Status	#	%	Branch of Service	#	%
Active Duty	166	32%	Army	140	27%
Retired	280	55%	Air Force	350	68%
Retired (disability)	37	7%	Navy	14	3%
Retired Reserve	5	1%	Marine Corps	5	1%
Deceased	24	5%	Other	3	1%
			Coast Guard		
			Reserve		
Total	512	100%		512	100%

Sponsor Grade (Active duty and Retired)

Grade	#	Grade	#	Grade	#	Grade	#	Grade	#
E-1	-	E-6	75	W-2	1	O-3	31	O-8	1
E-2	3	E-7	107	W-3	1	O-4	25	O-9	7
E-3	9	E-8	47	W-4	1	O-5	55	O-10	-
E-4	16	E-9	39	O-1	1	O-6	40	Unknown	32
E-5	35	W-1	1	O-2	4	O-7	5		
								Total	536

Marital Status	#	%
Married	412	80%
Single, never married	23	5%
Divorced or separated	44	9%
Widowed	8	1%
Does not apply (deceased)	24	5%
Unknown	1	-
Total	512	100%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Total number of sponsors does not add up to 536 due to incomplete surveys returned by respondents.

Table 12

Demographic Information for Beneficiaries in the WHMC Service Area
that Responded to the Beneficiary Health Care Survey

Type of Beneficiary	Average Age	Min/Max Age	Gender (% Male)	Number in the Survey Population
Sponsor	50	18/84	93%	488
Spouse	49	19/89	4%	439
Child # 1	12	1/22	50%	190
Child # 2	10	1/22	47%	117
Child # 3	9	1/21	56%	42
Child # 4	8	1/20	47%	14
Oth/Child 5	52	2/95	22%	8
Oth/Child 6	2	2/2	0%	1
Total				1,299
adjustment for questions left blank				26
Total Beneficiaries				1,325
Number of households responding				536
Average number of beneficiaries per household				2.47

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The number of sponsors does not equal the number of respondents for this survey (536) because some are deceased or this portion of the survey was not completed.

Note 3. The average number of beneficiaries per household was determined to convert the total WHMC service area population (172,752) into an estimated number of households to allow generalizations from the results found in the survey.

Note 4. The adjustment for questions left blank was derived by allowing one person per incomplete survey returned. Nine surveys were returned completely blank and others were returned with incomplete sections. In the general family information section, 17 respondents elected to not answer questions one and two.

Table 13

Inpatient Care Experienced by WHMC Service Area Beneficiaries:
Military and Civilian Facilities Combined

Years of Admission		
Year(s) of Admission	Frequency	Percent
1955 - 1983	44	13%
1984	10	3%
1985	14	4%
1986	21	6%
1987	25	7%
1988	33	9%
1989	46	13%
1990	115	33%
1991 (Jan - May)	42	12%
Total	350	100%

Gender	Number of Beneficiaries Admitted	Percent
Male	210	60%
Female	140	40%
Total	350	100%

Admission Ages/Beddays	Mean	Std Dev	Range
Age (Years)	46	19	1 - 94
Days in Hospital	11	30	1 - 365

Table 13 (Continued)

Inpatient Care Experienced by WHMC Service Area Beneficiaries:
Military and Civilian Facilities Combined

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Of 536 households surveyed, 350 reported at least one family member was admitted to a hospital while living in the greater San Antonio Area. The family member with the most recent admission should have been reported.

Table 14

Location of Inpatient Care Reported by Beneficiaries in the WHMCService Area

<u>Medical Facility</u>	<u>Frequency</u>	<u>Percent</u>
Wilford Hall USAF Med Center	184	52.4%
Brooke Army Medical Center	120	34.0%
Other Military Facility	1	.3%
Audie L. Murphy VA Hospital	1	.3%
Civilian Institutions	44	13.0%
Total	350	100.0%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The "Frequency" column represents the number of beneficiaries that were admitted to each medical facility.

Table 15

Inpatient Utilization, by Catchment Area and Medical Facility, for
WHMC Service Area Beneficiaries

<u>Catchment Area</u>	<u>WHMC</u>	<u>BAMC</u>	<u>Other Military</u>	<u>VA</u>	<u>Civilian</u>
WHMC	114 83%	8 6%		1 1%	13 10%
BAMC	61 30%	110 54%	1 1%		31 15%
Total	175 51%	118 35%	1 .5%	1 .5%	44 13%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The top number in each line represents the number of beneficiaries that were admitted to a medical facility. The bottom number is the percent of the total for each catchment area listed.

Note 3. Out of 536 respondents, 339 beneficiaries fit the criteria for this table. Persons in this table are from all four beneficiary categories: Active Duty, Active Duty Dependent, Retired, Retired Dependent/Survivor.

Table 16

Inpatient Utilization of Military, VA, and Civilian Medical Facilities, by Branch of Service, for WHMC Service Area Beneficiaries

Branch	WHMC	BAMC	Other Mil	VA	Civilian
Army	13 14%	67 70%			15 16%
Air Force	154 67%	50 21%	1 .5%	1 .5%	25 11%
Navy	5 56%	1 11%			3 33%
USMC	1 100%				
Other	2 67%				1 33%
Total	175 51%	118 35%	1 .5%	1 .5%	44 13%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The top number in each line represents the number of beneficiaries that were admitted to a medical facility. The bottom number is the percent of the total for each branch listed.

Note 3. Out of 536 respondents, the total number of beneficiaries that fit the criteria for this table are : 95 Army, 231 Air Force, 9 Navy, 1 USMC, and 3 Other (Coast Guard, Air Force Reserve) beneficiaries. Persons in this group are from all four beneficiary categories: Active Duty, Active Duty Dependent, Retired, Retired Dependent/Survivor.

Table 17

Inpatient Utilization of Military, VA, And Civilian Medical
Facilities, by Branch of Service, for WHMC Catchment Area
Beneficiaries

Branch	WHMC	BAMC	Other Mil	VA	Civilian
Army	8 47%	7 41%			2 12%
Air Force	99 90%	1 1%		1 1%	9 8%
Navy	4 80%				1 20%
USMC	1 100%				
Other	2 67%				1 33%
Total	114 83%	8 6%		1 1%	13 10%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The top number in each line represents the number of beneficiaries that were admitted to a medical facility. The bottom number is the percent of the total for each branch listed.

Note 3. Out of 536 respondents, the total number of beneficiaries that fit the criteria for this table are : 17 Army, 110 Air Force, 5 Navy, 1 USMC, and 3 Other (Coast Guard, Air Force Reserve) beneficiaries. Persons in this group are from all four beneficiary categories: Active Duty, Active Duty Dependent, Retired, Retired Dependent/Survivor.

Table 18

Inpatient Utilization of Military, VA, and Civilian Medical
Facilities, by Branch of Service, for BAMC Catchment Area
Beneficiaries

Branch	WHMC	BAMC	Other Mil	VA	Civilian
Army	5 6%	60 77%			13 17%
Air Force	56 46%	49 40%	1 1%		16 13%
Navy	1 25%	1 25%			2 50%
USMC					
Other					
Total	62 30%	110 54%	1 1%		31 15%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey, administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The top number in each line represents the number of beneficiaries that were admitted to a medical facility. The bottom number is the percent of the total for each branch listed.

Note 3. Out of 536 respondents, the total number of beneficiaries that fit the criteria for this table are : 78 Army, 122 Air Force, 4 Navy, 0 USMC, and 0 Other (Coast Guard, Air Force Reserve) beneficiaries. Persons in this group are from all four beneficiary categories: Active Duty, Active Duty Dependent, Retired, Retired Dependent/Survivor.

Table 19

Inpatient Care Experienced by WHMC Service Area Beneficiaries:
Clinical Service Utilization at Military and Civilian Facilities

Clinical Service	No. Admitted	Percent
Cardiology	39	11%
Dental	2	1%
EENT	26	7%
General Surgery	74	21%
Internal Medicine	38	11%
Mental Health	10	3%
OB/GYN	52	15%
Orthopaedics	32	9%
Pediatrics	15	4%
Others (Specified by Respondent) (18%)		
Miscellaneous	13	3.7%
Neurology	9	2.6%
Neurosurgery	6	1.7%
Oncology	5	1.4%
Unknown	17	4.8%
Urology	12	3.4%
Total	350	100.0%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Percentages are based on 350 family members admitted for inpatient care while living in the greater San Antonio area. The family member with the most recent admission was reported.

Table 20

Inpatient Care Experienced by WHMC Service Area Beneficiaries:
Method of Payment (Civilian and Military Facilities Combined)

<u>Source of Payment</u>	<u>Frequency</u>	<u>Percentage</u>
Family/Self	288	83%
CHAMPUS	36	10%
Medicare	25	7%
Medicare Supplemental	23	7%
CHAMPUS Supplemental	6	2%
Private Insurance	23	7%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Percentages are based on 350 family members admitted for inpatient care. The 'frequency' and 'percentage' columns do not add up to 350 or 100%, respectively, because some respondents marked more than one source of payment.

Note 3. The 'Family/Self' source of payment may be high due to the large number of beneficiaries that were admitted to a military hospital and were only required to pay the subsistence rate for the inpatient hospitalization.

Table 21

Family Use of Health Care Services: Hospital Bed Days and Dental Visits

Bed Days and Dental Visits (536 Household Responses - Note 2)			
	Mean	Std Dev	Range
Military Beddays	2.2	7.2	0 - 100
Civilian Beddays	1.7	19.9	0 - 365
Military Dental Visits	1.7	2.8	0 - 25
Civilian Dental Visits	2.7	3.7	0 - 32

Bed Days and Dental Visits (Households Indicating Usage - Note 3)					
	Mean	Std Dev	Range	Frequency	Percent
Military Beddays	8.9	12.1	1-100	131	25%
Civilian Beddays	24.5	72.4	1-365	37	7%
Mil Dental Visit	3.3	3.2	1-25	274	52%
Civ Dental Visit	4.6	3.8	1-32	304	58%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Bed days and visits for all 536 respondents includes responses equaling 'zero' when the question was not answered or if not applicable for the beneficiary participating in the survey.

Note 3. Percentages (for households indicating usage) are based on 527 households responding to this question.

Note 4. The data represents the entire family for only 1990.

Table 22

Visits Reported by WHMC Service Area Beneficiaries for the Entire Family (Some Responses Equalled "Zero")

Type of Outpatient Visit/Location	Mean	Std Dev	Range
Routine Care/Military	5.7	6.8	0 - 50
Routine Care/Civilian	1.8	6.8	0 - 100
Emergency Room/Military	1.2	2.2	0 - 30
Emergency Room/Civilian	.1	.7	0 - 10
Long-Term Care/Military	3.8	10.2	0 - 115
Long-Term Care/Civilian	1.3	10.8	0 - 200

Outpatient Visits Reported for Military Facilities

Facility	Mean	Std Dev	Range
WHMC	5.7	13.1	0 - 168
WHMC Dental Clinic	.9	2.4	0 - 24
BAMC	2.9	6.6	0 - 50
BAMC Dental Clinic	.2	1.4	0 - 20
Randolph AFB	1.3	3.6	0 - 48
Randolph AFB Dental Clinic	.3	1.0	0 - 12
Brooks AFB	.1	.5	0 - 4
Brooks AFB Dental Clinic	<.1	.2	0 - 3
Kelly AFB	.2	1.3	0 - 24
Kelly AFB Dental Clinic	.1	.6	0 - 9

Table 22 (Continued)

Visits Reported by WHMC Service Area Beneficiaries for the Entire Family (Some Responses Equaled 'Zero')

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Data is based on responses provided by 527 households. Range values and associated means are low due to some families reporting zero visits for various questions when it did not apply to their family's use of the health care services.

Note 3. Numbers in this table represent "visits per household" reported by 527 households in aggregate for the 1990 calendar year.

Table 23

Visits Reported by WHMC Service Area Beneficiaries for the Entire Family (Responses Do Not Equal "Zero")

Type of Outpatient Visit/Location	Mean	Std Dev	Range	Number of Households	Percent
Routine/Military	7.2	6.9	1-50	423	80%
Routine/Civilian	6.0	10.4	1-100	157	30%
ER Visit/Military	2.5	2.6	1-30	261	50%
ER Visit/Civilian	1.8	1.7	1-10	40	8%
Long-Term/Military	7.9	13.6	1-115	253	48%
Long-Term/Civilian	12.7	32.5	1-200	52	10%

Outpatient Visits Reported for Military Facilities

Facility	Mean	Std Dev	Range	Number of Households	Percent
WHMC	10.0	16.1	1-168	300	57%
WHMC Dental Clinic	3.6	3.8	1-24	131	25%
BAMC	7.6	8.9	1-50	204	39%
BAMC Dental Clinic	3.9	4.2	1-20	32	6%
Randolph AFB	5.4	5.5	1-48	129	24%
Randolph Dental Clinic	2.2	1.8	1-12	70	13%
Brooks AFB	2.2	1.2	1-4	19	4%
Brooks Dental Clinic	1.4	.8	1-3	7	1%
Kelly AFB	3.6	4.6	1-24	29	6%
Kelly Dental Clinic	2.3	1.9	1-9	19	4%

Table 23 (Continued)

Visits Reported by WHMC Service Area Beneficiaries for the Entire Family (Responses Do Not Equal "Zero")

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Data is based on responses for households reporting at least one visit for any of the areas identified. Households reporting "zero" for any of the entries listed are not included.

Note 3. The "number of households" column identifies the number of households that reported at least one visit for the entire family for each item listed.

Note 4. The mean, standard deviation, and range are the number of visits reported, by households, for the entire family.

Note 5. Percentages are based on 527 households participating in this survey in relation to households experiencing visits for each of the items listed for the 1990 calendar year.

Table 24

Outpatient Care Experienced by WHMC Service Area Beneficiaries in 1990

Requirement for Care		
	Frequency	Percentage
Did Not Require Outpatient Care	64	12%
Required Outpatient Care	463	88%
Total	527	100%

Gender		
Male	235	51%
Female	228	49%
Total	463	100%

Method of Access for Care		
Advance Appointment	365	79%
Emergency Room/Walk-in Clinic	98	21%
Total	463	100%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Data is based on the utilization of outpatient services for 1990 by one member in the family who had the most recent visit to a provider. Of the 536 surveys returned, 527 respondents completed this section of the survey.

Table 25

Waiting Time for Outpatient Care Experienced in 1990 by WHMC
Service Area Beneficiaries

<u>Waiting Time for an Appointment Made in Advance</u>	<u>Frequency</u>	<u>Percent</u>
Not Applicable (ER Visit or Walk-In)	170	37%
1 - 3 Days	84	18%
4 - 7 Days	49	11%
8 - 15 Days	54	12%
16 - 30 Days	61	13%
Over 30 Days	43	9%
Unknown	2	<1%
Total	463	100%

<u>Desired Waiting Time for an Advance Appointment</u>	<u>Frequency</u>	<u>Percent</u>
Same Day or Next Day	191	41%
Less than Four Days	108	24%
One Week	126	27%
More Than One Week	31	7%
More Than One Month	6	1%
Unknown	1	<1%
Total	463	100%

Table 25 (Continued)

Waiting Time for Outpatient Care Experienced in 1990 by WHMCService Area Beneficiaries

<u>Waiting Time After Arrival at the Clinic (before seeing provider)</u>	<u>Frequency</u>	<u>Percent</u>
1 - 5 Minutes	32	7%
6 - 15 Minutes	155	33%
16 - 25 Minutes	133	29%
26 - 45 Minutes	79	17%
Over 45 Minutes	61	13%
Unknown	3	<1%
<u>Total</u>	<u>463</u>	<u>100%</u>

<u>Desired Waiting Time after Arrival at the Clinic (Before Seeing a Provider)</u>	<u>Frequency</u>	<u>Percent</u>
1 - 5 Minutes	26	5%
6 - 15 Minutes	239	52%
16 - 25 Minutes	166	36%
26 - 45 Minutes	28	6%
Over 45 Minutes	2	<1%
Unknown	2	<1%
<u>Total</u>	<u>463</u>	<u>100%</u>

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Table 26

Outpatient Care Experienced by WHMC Service Area Beneficiaries:Location of Care and Source of Payment

<u>Location of Care</u>	<u>Frequency</u>	<u>Percent</u>
Civilian Facility	55	12%
Military Facility	408	88%
Total	463	100%

Military Facility Utilization

WHMC	210	51%
BAMC	129	32%
Kelly AFB Clinic	10	2%
Randolph AFB Clinic	52	13%
Brooks AFB Clinic	3	1%
Other	4	1%
Total	408	100%

<u>Source of Payment</u>	<u>Frequency</u>	<u>Percent</u>
No Cost/Military Facility	376	81%
Family/Self	33	7%
CHAMPUS	28	6%
Medicare	20	4%
Medicare Supplemental	13	3%
CHAMPUS Supplemental	3	<1%
Private Insurance	25	5%

Table 26 (Continued)

Outpatient Care Experienced by WHMC Service Area Beneficiaries:Location of Care and Source of Payment

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The "percent" column represents the proportion of persons (for each line item) in relation to 463 outpatient visits reported for this section of the survey. Respondents were instructed to circle all applicable payment sources.

Table 27

Outpatient Utilization by Catchment Area and Medical Facility for
WHMC Service Area Beneficiaries

<u>Catchment Area</u>	<u>WHMC</u>	<u>BAMC</u>	<u>Kelly</u>	<u>Randolph</u>	<u>Brooks</u>	<u>Civilian</u>
WHMC	97 80%	7 6%	6 5%			11 9%
BAMC	38 20%	84 44%	1 1%	30 15%	3 3%	33 17%
Total	135 44%	91 30%	7 2%	30 9%	3 1%	44 14%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The top number in each line represents the number of beneficiaries that visited a medical facility in 1990. The bottom number is the percent of the total for each catchment area listed.

Note 3. Out of 536 respondents, 310 beneficiaries fit the criteria for this table. Persons in this table are from all four beneficiary categories: Active Duty, Active Duty Dependent, Retired, Retired Dependent/Survivor.

Table 28

Outpatient Utilization of Medical Treatment Facilities, by Branch of Service, for WHMC Service Area Beneficiaries

Branch	WHMC	BAMC	Kelly	Randolph	Brooks	Civilian
Army	10 12%	55 63%		1 1%		21 24%
Air Force	117 55%	35 17%	7 3%	29 14%	3 2%	19 9%
Navy	5 56%	1 11%				3 33%
USMC	1 100%					
Other	2 67%					1 33%
Total	135 44%	91 30%	7 2%	30 9%	3 1%	44 14%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The top number in each line represents the number of beneficiaries that visited a medical facility in 1990. The bottom number is the percent of the total for each branch listed.

Note 3. Out of 536 respondents, the total number of beneficiaries that fit the criteria for this table are : 87 Army, 210 Air Force, 9 Navy, 1 USMC, and 3 Other (Coast Guard, Air Force Reserve) beneficiaries. Persons in this group are from all four beneficiary categories: Active Duty, Active Duty Dependent, Retired, Retired Dependent/Survivor.

Table 29

Outpatient Utilization of Medical Treatment Facilities, by Branch of Service, for WHMC Catchment Area Beneficiaries

Branch	WHMC	BAMC	Kelly	Randolph	Brooks	Civilian
Army	7 41%	7 41%				3 18%
Air Force	83 88%		6 6%			6 6%
Navy	4 80%					1 20%
USMC	1 100%					
Other	2 67%					1 33%
Total	97 80%	7 6%	6 5%			11 9%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The top number in each line represents the number of beneficiaries that visited a medical facility in 1990. The bottom number is the percent of the total for each branch listed.

Note 3. Out of 536 respondents, the total number of beneficiaries that fit the criteria for this table are : 17 Army, 95 Air Force, 5 Navy, 1 USMC, and 3 Other (Coast Guard, Air Force Reserve) beneficiaries. Persons in this group are from all four beneficiary categories: Active Duty, Active Duty Dependent, Retired, Retired Dependent/Survivor.

Table 30

Outpatient Utilization of Medical Treatment Facilities, by Branch of Service, for BAMC Catchment Area Beneficiaries

Branch	WHMC	BAMC	Kelly	Randolph	Brooks	Civilian
Army	3 4%	48 69%		1 1%		18 26%
Air Force	34 30%	35 30%	1 1%	29 25%	3 3%	13 11%
Navy	1 25%	1 25%				2 50%
Total	38 20%	84 44%	1 1%	30 15%	3 3%	33 17%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey, administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The top number in each line represents the number of beneficiaries that visited a medical facility in 1990. The bottom number is the percent of the total for each branch listed.

Note 3. Out of 536 respondents, the total number of beneficiaries that fit the criteria for this table are : 70 Army, 115 Air Force and 4 Navy beneficiaries. Persons in this group are from all four beneficiary categories: Active Duty, Active Duty Dependent, Retired, Retired Dependent/Survivor.

Table 31

Reason for Outpatient Care and Clinical Services Used for WHMC
Service Area Beneficiaries in 1990

<u>Reason for Visit</u>	<u>Frequency</u>	<u>Percent</u>
Emergency Care	63	13%
Long-term /Chronic Care	160	34%
Pregnancy	7	2%
Psychiatric Care	4	1%
Routine Checkup	64	14%
Short-term illness	82	18%
Other	83	18%
<u>Total</u>	<u>463</u>	<u>100%</u>
<u>Clinical Service</u>		
Emergency Medicine	46	10%
Flight Medicine	5	1%
General Surgery	22	4%
Internal Medicine	88	19%
Mental Health	1	<1%
OB/GYN	37	8%
Optometry	15	3%
Other	97	21%
Pediatrics	31	6%
Primary Care	100	22%
Unknown	21	5%
<u>Total</u>	<u>463</u>	<u>100%</u>

Table 31 (Continued)

Reason for Outpatient Care and Clinical Services Used for WHMC
Service Area Beneficiaries in 1990

<u>Other Clinical Services Specified</u>	<u>Frequency</u>	<u>Percent</u>
Allergy	3	.6%
Cardiology	17	4%
Dermatology	12	3%
EENT	6	1%
Miscellaneous	11	2%
Nephrology	3	.6%
Oncology/Radiation Therapy	7	1%
Ophthalmology	5	1%
Orthopaedics/Podiatry	13	3%
Pulmonary	3	.6%
Rheumatology	5	1%
Urology	12	3%
<u>Total</u>	<u>97</u>	<u>20.8%</u>

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The "*" column represents the family member with the most recent outpatient visit in 1990. The "%" column is the percentage of the "*" column in relation to 463 family members who required outpatient care in 1990.

Note 3. Percentages of other clinical services specified are derived from comparing each individual service to the entire 463 family members who required outpatient care in 1990.

Table 32

Civilian Facilities Used by WHMC Service Area Beneficiaries for
Outpatient and Inpatient Care

<u>Medical Facility</u>	<u>Outpatient</u>	<u>Inpatient</u>
Audie L. Murphy VA Hospital	1	
Autanga Med Center, AL		1
Barnes Eye Center	1	
University Med Center	1	2
Brady Green Med Center	1	
Charter Real Hospital		1
CPC Afton Oaks		1
Crestway Medical Clinic	1	
Guadalupe Valley Hospital, Seguin	2	1
Humana Metro	6	3
Humana, Village Oaks	8	4
Lahey Clinic, MA	1	1
McKenna Hospital, New Braunfels	3	5
Medina Community Hospital	1	1
Methodist Hospital	1	4
Northeast Baptist Hospital	5	5
Nix Hospital	1	1
Opthamalogy Assoc. of SA	1	
Private Physician (unknown)	15	6
San Marcos Treatment Center		1
Shriner Hospital, Houston	1	
Southeast Baptist Hospital		1
St. Lukes Lutheran Hospital	1	3
St. Rose Hospital	2	1
Southwest Oncology Clinic	1	
Texas Headache Institute	1	
Villa Rosa Hospital		1
Warm Springs Rehabilitation Hosp		1
Total	55	44

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The numbers under the "Outpatient" and "Inpatient" columns represent the number of beneficiaries that visited the civilian facility for health care services.

Note 3. Unless otherwise identified, all facilities are located in the greater San Antonio area.

Table 33

Utilization of Outpatient Clinical Services by Beneficiaries in the
WHMC Service Area

Clinical Service	Not Used	%	Used on a Recurring Basis	%
Allergy			2	.4%
Cardiology			8	1.5%
Dermatology			11	2.1%
EENT			4	.7%
Emergency Medicine	74	14%	163	30.4%
Flight Medicine	470	88%	25	4.7%
Gastroenterology			1	.2%
General Surgery	167	31%	76	14.2%
Internal Medicine	153	29%	172	32.1%
Mental Health	423	79%	20	3.7%
Nephrology			4	.7%
Neurology			6	1.1%
Neurosurgery			1	.2%
Obstetrics/Gynecology	180	34%	199	37.1%
Oncology			6	1.1%
Ophthalmology			3	.6%
Optometry	91	17%	232	43.3%
Orthopedics			4	.7%
Pediatrics	348	65%	103	19.2%
Plastic Surgery			2	.4%
Podiatry			2	.4%
Primary Care	66	12%	340	63.4%
Pulmonary			3	.6%
Rheumatology			7	1.3%
Urology			13	2.4%
Wellness			1	.2%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Frequencies under the "No use" and "Recurring use" columns are derived from the number of "votes" received from beneficiaries completing the Beneficiary Survey. Clinical services that do not have frequencies under the "No use" column are write-in responses for the "Recurring use" column.

Note 3. Percentages under the "%" column represent the percentage of the frequency identified in relation to the 536 respondents for this survey; eg. 14% of the 536 respondents indicated Emergency Medicine is a clinical service they do not use.

Table 34

Reason Why Beneficiaries Could Not Obtain Desired Health Care Services from the Military Health Care System

<u>Reason</u>	<u>Frequency</u>	<u>Percent</u>
Too difficult to get an appointment	205	39%
Unable to secure transportation	11	2%
Unable to get off work	17	3%
Fear of finding out what the problem was	9	2%
Childcare unavailable	6	1%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Of the 536 respondents, 9 did not answer this question, 290 (54%) indicated no problems were experienced, and 236 (44%) identified 248 specific reasons why they did not see a provider.

Note 3. Percentages are based on the frequencies for each reason in relation to the 527 households surveyed.

Table 35

Number of Times a WHMC Service Area Beneficiary Went to a
Civilian Provider Because of Limited Access at a Military
Treatment Facility

<u>No. of Visits</u>	<u>Frequency</u>	<u>Percent</u>
Never	353	67%
1 to 5	132	25%
6 to 10	19	4%
More than 10	19	4%
Total	523	100%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Table 36

Medical and Dental Insurance Coverage for WHMC Service Area
Beneficiaries

<u>Insurance Coverage</u>	<u>Frequency</u>	<u>Percent</u>
No Insurance	295	56%
Medical (Not CHAMPUS)	202	38%
Dental (Not Delta Dental)	100	19%

Beneficiary Coverage

<u>Beneficiary</u>	<u>Medical * (%)</u>	<u>Dental * (%)</u>
Sponsor	143 (27%)	78 (16%)
Spouse	147 (28%)	83 (16%)
Dependents	1 (<1%)	29 (6%)

Source of Insurance Payment

Self/Family	148 (28%)	71 (14%)
Employer	72 (14%)	53 (10%)

Type of Insurance

Private Company (e.g. Prudential)	110 (21%)	80 (15%)
HMO	31 (6%)	18 (3%)
Medicare Part A	75 (14%)	
Medicare Part B	75 (14%)	
Medicare Supplemental	37 (7%)	
CHAMPUS Supplemental	18 (3%)	

Table 36 (Continued)

Medical and Dental Insurance Coverage for WHMC Service Area
Beneficiaries

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Of the 536 respondents, 9 failed to answer the question, 295 had no insurance, and 232 had some form of insurance, whether it was medical, dental or both.

Note 3. Percentages identify the proportion of each group in relation to the 527 respondents who answered these questions.

Note 4. In some cases, both the family and the employer were identified as the payor for insurance coverage.

Table 37

Utilization of Medical Treatment Facilities, in Relation to
Insurance Coverage, for WHMC Service Area Beneficiaries

Medical Insurance	Outpatient Utilization					
	WHMC	BAMC	Kelly	Randolph	Brooks	Civilian
No	83 50%	50 30%	4 2%	19 11.4%	1 .6%	10 6%
Yes	58 38%	44 29%	4 3%	12 7.8%	2 1.2%	34 22%
Total	141 44%	94 29%	8 3%	31 9%	3 1%	44 14%

Medical Insurance	Inpatient Utilization				
	WHMC	BAMC	Other Mil	VA	Civilian
No	114 60%	65 34%	1 .5%	1 .5%	10 5%
Yes	69 44%	55 35%			34 21%
Total	183 52%	120 34.4%	1 .3%	1 .3%	44 13%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. The top number in each line represents the number of beneficiaries that visited a medical facility and whether or not they had medical insurance. The bottom number is the percent of the total for each line listed.

Table 38

General Opinions about Health Care Services Provided at Wilford
Hall USAF Medical Center (WHMC)

	Strongly Agree (1)	Agree (2)	Not Sure (3)	Disagree (4)	Strongly Disagree (5)	Average (6)
a. My family and I are satisfied with the health care we receive at WHMC.	109 30%	209 57%	23 6%	20 5%	9 2%	1.9 370
b. Finding an open parking space at WHMC is a problem.	192 50%	128 33%	18 5%	42 11%	5 1%	1.8 385
c. In an emergency, one can obtain medical care quickly.	68 19%	156 44%	79 22%	40 11%	16 4%	2.4 359
d. Healthcare providers at WHMC treat us with respect.	109 29%	231 60%	18 5%	20 5%	4 1%	1.9 382
e. WHMC has the resources needed to provide health care for all eligible beneficiaries in San Antonio.	64 16%	125 31%	138 35%	44 11%	29 7%	2.6 400
f. It's hard to get an appointment at WHMC for most clinic services.	81 21%	165 42%	62 16%	70 18%	14 3%	2.4 392
g. Places where we can get military health care in San Antonio are conveniently located.	115 24%	265 55%	58 12%	35 7%	7 2%	2.1 480
h. After we arrive at a clinic in WHMC, we usually have to wait a long time to see a provider.	38 10%	134 36%	44 12%	145 39%	13 3%	2.9 374

Table 38 (Continued)

General Opinions about Health Care Services Provided at Wilford
Hall USAF Medical Center (WHMC)

	Strongly Agree (1)	Agree (2)	Not Sure (3)	Disagree (4)	Strongly Disagree (5)	Average (6)
i. When our family needs health care we typically use a military facility.	237 49%	201 42%	7 2%	21 4%	13 3%	1.7 479
j. WHMC is our primary facility for health care needs.	143 39%	109 30%	12 3%	87 23%	18 5%	2.2 369

Note 1. Data is extracted from results of the 1991 Beneficiary health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Of the 527 household respondents, the total number of responses for each of the items above varied from a low of 359 for item c to a high of 480 for item g. Variation in the number of responses for each item is due to the number of respondents who specified "WHMC Not Used" for that item and those who did not mark the item at all.

Note 3. The top number in columns 1 through 5 represents the number of households who selected that response about the health care at WHMC. The bottom figure depicts the proportion that group represents of the 527 households who participated in this portion of the survey.

Note 4. Column 6 provides the mean of the responses (top figure) for each individual item and the total number of respondents who answered that item (bottom figure). Responses are numerically ranked from one to five, one being best and five being worst. For example, item a has a mean (average) of 1.9. This means that the average of all responses for this item can be interpreted to mean, in general, that the respondents "Agree" with the statement "my family and I are satisfied with the health care we receive at WHMC." In fact, the average for all items, with rounding, will be 2.0, "Agree", except for items e and h. These two items would round to 3.0, "Not Sure."

Table 39

Beneficiary Comments, (Improvements, Best Services, New Services)

Improvements suggested for WHMC

Appointment System

Better Access

Improve phone line access (1-800 number)

Improve appointment scheduling

Timeliness of obtaining an appointment

Change attitudes of WHMC employees

Toward patients and other staff members (more courtesy, tact)

Improve Continuity of care between referral clinics

Offer Dental care for retirees and their dependents

Offer Dental care for active duty dependents

Decrease Emergency room waiting time

Enhance communication between patients and providers

Increase information disseminated to beneficiary population on Health

care services offered by San Antonio Military Treatment Facilities

Parking; better access to parking, more spaces needed, etc..

Decrease waiting time in the clinics

What does WHMC do best?

Almost everything

Cardiology

Caring for patients

Caring for newborns

Caring for critically ill patients

Courtesy, compassion, caring

Customer service

Handling the tremendous workload with scarce resources

Diagnosing medical conditions

Emergency room care

Excellent facility

Inpatient care

Making patients wait (negative comment)

Primary care

Overall patient care

Quality of care

Treating patients

Wellness program

Table 39 (Continued)

Beneficiary Comments, (Improvements, Best Services, New Services)

New services WHMC should provide

Annual physicals for retirees
Babysitting service
Improved appointment system
Chiropractics
Dental care for retirees and active duty dependents
Family practice
Mammograms
Orthodontics
Shuttle for parking

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Items listed above are the most frequent answers provided by respondents for questions in the survey pertaining to what WHMC should improve, areas WHMC is best at, and new services beneficiaries would like to see offered by WHMC. The most frequent responses in the 'improvement' area concern the WHMC appointment system and parking. Excellent patient care and caring attitudes displayed by the WHMC staff are the most frequent responses for WHMC's 'Best.' Finally, the most frequent responses for 'New services' pertain to providing dental care and annual physicals for retirees and active duty dependents.

Table 40

Methods of Obtaining Health Care Information for Beneficiaries in
the WHMC Service Area

<u>Information Source</u>	<u>Frequency</u>	<u>Percent of Sample</u>
Base Newspaper	169	32%
Direct contact with hospital	254	47%
Handbook or Brochure	117	22%
Spouse Organizations	3	.6%
Supervisor	17	3%
Friends/Neighbors	117	22%
Army/Navy/Air Force Times	26	5%
Recruiters	2	.4%
Receive No information on Military Health Care Services	148	28%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Frequencies for each information source were derived by tabulating "votes" provided by beneficiaries participating in the survey. Percentages are based on the number of responses for each information source in relation to the 536 household respondents; eg. 169 out of 536 respondents (or 32%) indicated the Base Newspaper was one of the sources used for obtaining health care information. Information sources are not mutually exclusive. Some respondents may have picked more than one source in their survey, except those who replied they receive no information.

Table 41

Delta Dental Participation and Beneficiary Awareness of WHMC
Refill Pharmacy

Delta Dental Plan		
	Frequency	Percent
Delta Dental Participant	86	16%

Refill Pharmacy		
Aware Refill Pharmacy is Open	218	42%
Know the Phone Number	106	20%

Note 1. Data is extracted from results of the 1991 Beneficiary Health Care Survey administered to beneficiaries living in the WHMC and BAMC catchment areas.

Note 2. Percentages are based on 527 households responding to these questions.

Table 42

Wilford Hall USAF Medical Center Top Twenty Five DRGs by Beneficiary Category

ACTIVE DUTY			ACTIVE DUTY DEP		RETIRED		RET DEPN/SURV/OTH	
DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP
467	OTH FACTORS INFL HLTH	276	391	NORMAL NEWBORN	1,014	125	CIRC DIS-CARD CATH	254
427	NEUROSES EXC DEPRESS	252	373	VAG DELIV WO COMPL D	892	39	LENS PROCS W/WO VITR	175
373	VAG DELIV WO COMPL DX	232	389	FULL TERM W MAJ PROB	160	112	OTHER VASCULAR PROCS	141
398	IMMUNITY DISOR >69-CC	229	390	NEONATE W OTH SIG PR	123	468	UNRELATED OR PROCS	131
421	VIRAL ILLNESS >17	210	187	DENTAL EXTRACT/RESTO	120	143	CHEST PAIN	120
187	DENTAL EXTRACT/RESTOR	207	467	OTH FACTORS INFL HLT	119	467	OTH FACTORS INFL HLT	116
243	MEDICAL BACK PROBLEMS	197	62	MYRINGOTOMY-TUBE 0-1	112	162	ING/FEM HERN 18-69	110
435	DETOX/OTH SYMPT TREAT	191	468	UNRELATED OR PROCS	109	82	RESPIRATORY NEOPLASM	104
183	MISC DIGEST DIS 18-69	156	372	VAG DELIV W COMPL DX	101	122	CIRC DIS-CV-DISCHG A	97
466	AFTERCARE WO MALIG	131	359	TUBAL INTER-NONMALIG	101	410	CHEMOTHERAPY	93
323	URINARY STONES >69-CC	107	381	ABORTION W D&C	94	398	IMMUNITY DISOR >69-C	85
426	DEPRESSIVE NEUROSES	103	102	RESP SYS DX <70 WO C	88	106	CORONARY BYPASS-CATH	82
430	PSYCHOSES	102	384	OTH ANTEPAR DX WO CO	84	138	CONDUCT DISORD >69-C	81
215	BACK/NECK PROCS <70	102	184	MISC DIGEST DIS 0-17	82	243	MEDICAL BACK PROBLEM	73
278	CELLULITIS 18-69	99	379	THREATENED ABORTION	81	107	CORONARY BYPASS	72
25	SEIZUR/HEAD 18-69 WO C	95	41	EXTRAOCU EXC ORBIT 0	78	435	DETOX/OTH SYMPT TREA	72
468	UNRELATED OR PROCS	90	388	PREMATURITY WO MAJ P	69	323	URINARY STONES >69-C	72
222	KNEE PROCS <70 WO CC	87	55	MISC EAR/NOSE/THROAT	68	14	CEREBVASC DIS EXC TI	70
162	ING/FEM HERN 18-69	85	371	C SECTION WO CC	65	88	CHRON OBSTRUCT PULM	70
125	CIRC DIS-CARD CATH	75	383	OTH ANTEPART DX W CO	64	183	MISC DIGEST DIS 18-6	70
69	OTITIS MED 18-69 WO CC	73	387	PREMATURITY-MAJ PROB	63	139	CONDUCT DIS <70 WO C	69
169	MOUTH PROCS <70	66	361	F LAPAROSC EXC TUB I	58	182	MISC DIGEST DIS >69-	66
56	RHINOPLASTY	64	91	PNEUMONIA/PLEURISY 0	57	132	ARTHEROSCLEROSIS >69	65
339	TESTES PROCS-NONMAL>17	53	98	BRONCHITIS/ASTHMA 0-	56	127	HEART FAILURE/SHOCK	65
229	OTH HAND PROCEDURES	52	60	TONSILEC/ADENOIDECC 0	55	337	TRANSUR PROSTATECT <	64
							112 OTHER VASCULAR PROCS	57

Note . Data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 43

Wilford Hall USAF Medical Center Top Twenty Five DRGs All Patients

DRG	TITLE	DISP
373	VAG DELIV WO COMPL DX	1,246
391	NORMAL NEWBORN	1,153
467	OTH FACTORS INFL HLTH	579
468	UNRELATED OR PROCS	497
125	CIRC DIS-CARD CATH	486
187	DENTAL EXTRACT/RESTOR	398
183	MISC DIGEST DIS 18-69	369
243	MEDICAL BACK PROBLEMS	368
39	LENS PROCS W/WO VITREC	353
398	IMMUNITY DISOR >69-CC	344
435	DETOX/OTH SYMPT TREAT	297
427	NEUROSES EXC DEPRESS	294
410	CHEMOTHERAPY	276
143	CHEST PAIN	276
430	PSYCHOSES	254
359	TUBAL INTER-NONMALIG	246
323	URINARY STONES >69-CC	244
421	VIRAL ILLNESS >17	242
112	OTHER VASCULAR PROCS	225
162	ING/FEM HERN 18-69	215
25	SEIZUR/HEAD 18-69 WO C	200
215	BACK/NECK PROCS <70	196
466	AFTERCARE WO MALIG	194
55	MISC EAR/NOSE/THROAT	186
389	FULL TERM W MAJ PROBS	185

Note. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 44

Wilford Hall USAF Medical Center FY89 Top Twenty Five DRGs, WHMC Catchment AreaBeneficiaries

ACTIVE DUTY			ACTIVE DUTY DEP			RETIRED			RET DEPN/SURV/OTH		
DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP
187	DENTAL EXTRACT/RESTO	148	391	NORMAL NEWBORN	659	125	CIRC DIS-CARD CATH	114	468	UNRELATED OR PROCS	102
421	VIRAL ILLNESS >17	146	373	VAG DELIV WO COMPL D	574	39	LENS PROCS W/WO VITR	85	391	NORMAL NEWBORN	98
373	VAG DELIV WO COMPL D	141	389	FULL TERM W MAJ PROB	95	162	ING/FEM HERN 18-69	72	39	LENS PROCS W/WO VITR	77
427	NEUROSES EXC DEPRESS	134	390	NEONATE W OTH SIG PR	88	122	CIRC DIS-CV-DISCHG A	60	373	VAG DELIV WO COMPL D	74
183	MISC DIGEST DIS 18-6	104	62	MYRINGOTOMY-TUBE 0-1	82	143	CHEST PAIN	59	143	CHEST PAIN	62
466	AFTERCARE WO MALIG	99	372	VAG DELIV W COMPL DX	69	112	OTHER VASCULAR PROCS	57	88	CHRON OBSTRUCT PULM	53
278	CELLULITIS 18-69	73	381	ABORTION W D&C	64	468	UNRELATED OR PROCS	53	125	CIRC DIS-CARD CATH	52
243	MEDICAL BACK PROBLEM	63	102	RESP SYS DX <70 WO C	63	82	RESPIRATORY NEOPLASM	51	359	TUBAL INTER-NONMALIG	51
25	SEIZUR/HEAD 18-69 WO	53	359	TUBAL INTER-NONMALIG	60	14	CEREBVASC DIS EXC TI	45	198	CHOLECYSTECTOMY <70	47
69	OTITIS MED 18-69 WO	52	187	DENTAL EXTRACT/RESTO	55	138	CONDUCT DISORD >69-C	44	430	PSYCHOSES	45
162	ING/FEM HERN 18-69	49	184	MISC DIGEST DIS 0-17	45	410	CHEMOTHERAPY	43	276	NONMALIG BREAST DISO	45
435	DETOX/OTH SYMPT TREA	48	384	OTH ANTEPAR DX WO CO	45	88	CHRON OBSTRUCT PULM	40	182	MISC DIGEST DIS >69-	43
426	DEPRESSIVE NEUROSES	46	467	OTH FACTORS INFL HLT	44	127	HEART FAILURE/SHOCK	39	364	D&C EXCEPT MALIGNANC	43
467	OTH FACTORS INFL HLT	38	379	THREATENED ABORTION	42	435	DETOX/OTH SYMPT TREA	35	183	MISC DIGEST DIS 18-6	42
90	PNEUM/PLEUR 18-69 WO	38	468	UNRELATED OR PROCS	41	15	TIA & PRECEREB OCCLU	33	14	CEREBVASC DIS EXC TI	41
222	KNEE PROCS <70 WO CC	36	383	OTH ANTEPART DX W CO	41	337	TRANSUR PROSTATECT <	33	262	BREAST BIOP NON-MALI	41
169	MOUTH PROCS <70	34	91	PNEUMONIA/PLEURISY 0	38	336	TRANSUR PROSTAT >69-	32	127	HEART FAILURE/SHOCK	40
229	OTH HAND PROCEDURES	32	98	BRONCHITIS/ASTHMA 0-	38	106	CORONARY BYPASS-CATH	31	410	CHEMOTHERAPY	38
56	RHINOPLASTY	27	361	F LAPAROSC EXC TUB I	38	89	PNEUMONIA/PLEUR >69-	30	360	VAGINA/CERV/VULV PRO	38
167	APPEND/NO COMP <70	24	371	C SECTION WO CC	35	161	ING/FEM HERN >69-CC	28	320	KIDNEY INFEC >69-CC	37
430	PSYCHOSES	21	388	PREMATURITY WO MAJ P	34	182	MISC DIGEST DIS >69-	27	138	CONDUCT DISORD >69-C	37
468	UNRELATED OR PROCS	21	422	VIR ILL UNKN ORIG 0-	34	209	MAJ JT/LIMB REATTACH	26	229	OTH HAND PROCEDURES	31
360	VAGINA/CERV/VULV PRO	21	60	TONSILEC/ADENOIDEC 0	33	198	CHOLECYSTECTOMY <70	26	112	OTHER VASCULAR PROCS	28
231	REM OTH INT DEVICES	20	374	VAG DELIV W STERIL/D	32	243	MEDICAL BACK PROBLEM	26	243	MEDICAL BACK PROBLEM	27
284	MIN SKIN DISORD <70	19	70	OTITIS MEDIA & URI 0	31	133	ARTHEROSCLEROSIS <70	25	89	PNEUMONIA/PLEUR >69-	27

Note. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 45

Wilford Hall USAF Medical Center FY89 Top Twenty Five DRGs, BAMC Catchment AreaBeneficiaries

ACTIVE DUTY			ACTIVE DUTY DEP		RETIRED		RET DEPN/SURV/OTH	
DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP
373	VAG DELIV WO COMPL D	66	391	NORMAL NEWBORN	272	39	LENS PROCS W/NO VITR	31
435	DETOX/OTH SYMPT TREA	39	373	VAG DELIV WO COMPL D	247	435	DETOX/OTH SYMPT TREA	22
187	DENTAL EXTRACT/RESTO	29	389	FULL TERM W MAJ PROB	35	143	CHEST PAIN	22
162	ING/FEM HERN 18-69	20	187	DENTAL EXTRACT/RESTO	35	88	CHRON OBSTRUCT PULM	15
427	NEUROSES EXC DEPRESS	19	384	OTH ANTEPAR DX WO CO	29	138	CONDUCT DISORD >69-C	15
56	RHINOPLASTY	13	41	EXTRAOCU EXC ORBIT 0	29	14	CEREBVASC DIS EXC TI	14
466	AFTERCARE WO MALIG	13	390	NEOMATE W OTH SIG PR	23	139	CONDUCT DIS <70 WO C	14
467	OTH FACTORS INFL HLT	11	381	ABORTION W D&C	22	125	CIRC DIS-CARD CATH	14
426	DEPRESSIVE NEUROSES	11	62	MYRINGOTOMY-TUBE 0-1	22	162	ING/FEM HERN 18-69	14
270	OTH SKIN PLAS PROC <	10	468	UNRELATED OR PROCS	19	122	CIRC DIS-CV-DISCHG A	13
243	MEDICAL BACK PROBLEM	9	379	THREATENED ABORTION	18	468	UNRELATED OR PROCS	11
359	TUBAL INTER-NONMALIG	9	360	VAGINA/CERV/VULV PRO	18	430	PSYCHOSES	11
169	MOUTH PROCS <70	9	388	PREMATURITY WO MAJ P	17	442	OTH OR PROC-INJ >69-	11
436	SUB ABUSE-REHAB THER	8	359	TUBAL INTER-NONMALIG	17	183	MISC DIGEST DIS 18-6	10
430	PSYCHOSES	7	102	RESP SYS DX <70 WO C	16	132	ARTHEROSCLEROSIS >69	9
381	ABORTION W D&C	7	372	VAG DELIV W COMPL DX	15	182	MISC DIGEST DIS >69-	9
383	OTH ANTEPART DX W CO	6	91	PNEUMONIA/PLEURISY 0	15	112	OTHER VASCULAR PROCS	9
372	VAG DELIV W COMPL DX	6	467	OTH FACTORS INFL HLT	15	323	URINARY STONES >69-C	9
125	CIRC DIS-CARD CATH	6	55	MISC EAR/NOSE/THROAT	15	106	CORONARY BYPASS-CATH	8
374	VAG DELIV W STERIL/D	6	374	VAG DELIV W STERIL/D	14	148	S/L BOWEL PROCS >69-	8
323	URINARY STONES >69-C	6	422	VIR ILL UNKN ORIG 0-	14	110	RECON VASC PROC >69-	8
421	VIRAL ILLNESS >17	6	184	MISC DIGEST DIS 0-17	14	15	TIA & PRECEREB OCCLU	8
361	F LAPAROSC EXC TUB I	6	60	TONSILEC/ADENOIDEC 0	13	133	ARTHEROSCLEROSIS <70	8
360	VAGINA/CERV/VULV PRO	6	163	HERN PROCS 0-17	13	127	HEART FAILURE/SHOCK	8
215	BACK/NECK PROCS <70	5	371	C SECTION WO CC	12	337	TRANSUR PROSTATECT <	8
						373	VAG DELIV WO COMPL D	26
						359	TUBAL INTER-NONMALIG	25
						391	NORMAL NEWBORN	25
						468	UNRELATED OR PROCS	21
						39	LENS PROCS W/NO VITR	21
						187	DENTAL EXTRACT/RESTO	21
						364	D&C EXCEPT MALIGNANC	18
						143	CHEST PAIN	17
						430	PSYCHOSES	14
						262	BREAST BIOP NON-MALI	14
						82	RESPIRATORY NEOPLASM	13
						127	HEART FAILURE/SHOCK	13
						125	CIRC DIS-CARD CATH	13
						183	MISC DIGEST DIS 18-6	13
						410	CHEMOTHERAPY	13
						243	MEDICAL BACK PROBLEM	12
						198	CHOLECYSTECTOMY <70	12
						467	OTH FACTORS INFL HLT	12
						276	NONMALIG BREAST DISO	11
						320	KIDNEY INFEC >69-CC	10
						88	CHRON OBSTRUCT PULM	10
						360	VAGINA/CERV/VULV PRO	10
						197	CHOLECYSTECTOMY >69-	9
						14	CEREBVASC DIS EXC TI	9
						356	F REPRO RECON PROCS	9

Note. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 46

Wilford Hall USAF Medical Center FY89 Top Twenty Five DRGs, Other Catchment AreaBeneficiaries

ACTIVE DUTY			ACTIVE DUTY DEP			RETIRED			RET DEP/NO SURV/OTH		
DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP
467	OTH FACTORS INFL HLT	226	467	OTH FACTORS INFL HLT	59	125	CIRC DIS-CARD CATH	112	410	CHEMOTHERAPY	70
398	IMMUNITY DISOR >69-C	210	391	NORMAL NEWBORN	56	467	OTH FACTORS INFL HLT	81	125	CIRC DIS-CARD CATH	48
243	MEDICAL BACK PROBLEM	120	373	VAG DELIV WO COMPL D	50	112	OTHER VASCULAR PROCS	63	468	UNRELATED OR PROCS	39
435	DETOX/OTH SYMPT TREA	103	468	UNRELATED OR PROCS	47	398	IMMUNITY DISOR >69-C	60	39	LENS PROCS W/NO VITR	32
427	NEUROSES EXC DEPRESS	99	385	NEONATES DIED/TRANS	36	468	UNRELATED OR PROCS	59	243	MEDICAL BACK PROBLEM	30
323	URINARY STONES >69-C	94	387	PREMATURITY-MAJ PROB	34	323	URINARY STONES >69-C	47	261	BREAST PROC NON-MALI	29
215	BACK/NECK PROCS <70	83	187	DENTAL EXTRACT/RESTO	30	39	LENS PROCS W/NO VITR	45	467	OTH FACTORS INFL HLT	26
430	PSYCHOSES	72	41	EXTRAOCU EXC ORBIT 0	28	107	CORONARY BYPASS	42	82	RESPIRATORY NEOPLASM	25
468	UNRELATED OR PROCS	62	256	OTH MUSCSKEL SYS DX	27	243	MEDICAL BACK PROBLEM	40	183	MISC DIGEST DIS 18-6	23
125	CIRC DIS-CARD CATH	57	389	FULL TERM W MAJ PROB	25	106	CORONARY BYPASS-CATH	35	143	CHEST PAIN	22
421	VIRAL ILLNESS >17	56	386	NEONATE RESP DISTRES	24	82	RESPIRATORY NEOPLASM	33	209	MAJ JT/LIMB REATTACH	21
426	DEPRESSIVE NEUROSES	45	323	URINARY STONES >69-C	24	75	MAJOR CHEST PROCEDUR	30	359	TUBAL INTER-NONMALIGN	20
222	KNEE PROCS <70 WO CC	45	305	KID PRO-NONNEOPL <70	22	132	ARTHEROSCLEROSIS >69	27	75	MAJOR CHEST PROCEDUR	19
183	MISC DIGEST DIS 18-6	43	55	MISC EAR/NOSE/THROAT	21	410	CHEMOTHERAPY	27	323	URINARY STONES >69-C	18
25	SEIZUR/HEAD 18-69 WO	39	261	BREAST PROC NON-MALI	20	139	CONDUCT DIS <70 WO C	26	409	RADIOTHERAPY	17
339	TESTES PROCS-NONMAL	33	125	CIRC DIS-CARD CATH	19	305	KID PRO-NONNEOPL <70	24	305	KID PRO-NONNEOPL <70	17
53	SINUS/MAST PROCS >17	31	410	CHEMOTHERAPY	19	183	MISC DIGEST DIS 18-6	24	112	OTHER VASCULAR PROCS	17
133	ARTHEROSCLEROSIS <70	29	359	TUBAL INTER-NONMALIGN	18	133	ARTHEROSCLEROSIS <70	24	316	RENAL FAILURE	16
55	MISC EAR/NOSE/THROAT	29	184	MISC DIGEST DIS 0-17	18	404	LYMPHOMA/LEUKEM 18-6	22	373	VAG DELIV WO COMPL D	16
187	DENTAL EXTRACT/RESTO	29	388	PREMATURITY WO MAJ P	17	182	MISC DIGEST DIS >69-	21	215	BACK/NECK PROCS <70	15
436	SUB ABUSE-REHAB THER	28	379	THREATENED ABORTION	15	143	CHEST PAIN	21	430	PSYCHOSES	14
428	PERSONALITY DISORDER	28	163	HEMN PROCS 0-17	15	110	RECON VASC PROC >69-	20	360	VAGINA/CERV/VULV PRO	14
139	CONDUCT DIS <70 WO C	27	212	HIP/FEMUR PROCS 0-17	14	403	LYMPHOMA/LEUKEM >69-	20	403	LYMPHOMA/LEUKEM >69-	13
40	EXTRAOCUL EXC ORBIT	27	372	VAG DELIV W COMPL DX	13	5	EXTRACRANIAL VASC PR	20	25	SEIZUR/HEAD 18-69 WO	13
19	NERVE DISORD <70 WO	26	371	C SECTION WO CC	13	209	MAJ JT/LIMB REATTACH	18	182	MISC DIGEST DIS >69-	13

Note. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 47

WHMC Catchment Area Beneficiaries Treated at BAMC

ACTIVE DUTY			ACTIVE DUTY DEP		RETIRED		RET DEPN/SURV/OTH				
DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP
373	VAG DELIV WO COMPL DX	5	373	VAG DELIV WO COMPL D	21	466	AFTERCARE WO MALIG	10	39	LENS PROCS W/NO VITR	21
360	VAGINA/CERV/VULV PROCS	4	391	NORMAL NEWBORN	19	143	CHEST PAIN	17	183	MISC DIGEST DIS 18-6	21
162	ING/FEM HERN 18-69	3	183	MISC DIGEST DIS 18-6	9	410	CHEMOTHERAPY	17	262	BREAST BIOP NON-MALI	16
183	MISC DIGEST DIS 18-69	3	466	AFTERCARE WO MALIG	8	189	OTH DIGEST DX 18-69	17	125	CIRC DIS-CARD CATH	11
55	MISC EAR/NOSE/THROAT	2	383	OTH ANTEPART DX W CO	7	183	MISC DIGEST DIS 18-6	16	182	MISC DIGEST DIS >69-	11
224	UP EXTREM PROCS <70	2	359	TUBAL INTER-NONMALIG	6	82	RESPIRATORY NEOPLASM	14	143	CHEST PAIN	10
384	OTH ANTEPAR DX WO COMP	2	379	THREATENED ABORTION	5	125	CIRC DIS-CARD CATH	14	410	CHEMOTHERAPY	10
7	NERV SYS PROCS >69-CC	1	386	NEONATE RESP DISTRES	4	39	LENS PROCS W/NO VITR	14	467	OTH FACTORS INFL HLT	10
223	UP EXTREM PROC >69-CC	1	389	FULL TERM W MAJ PROB	4	112	OTHER VASCULAR PROCS	12	458	MOXEXT BURNS-SKIN GR	9
131	VASC DISORD <70 WO CC	1	184	MISC DIGEST DIS 0-17	4	467	OTH FACTORS INFL HLT	11	209	MAJ JT/LIMB REATTACH	9
148	S/L BOWEL PROCS >69-CC	1	70	OTITIS MEDIA & URI 0	4	182	MISC DIGEST DIS >69-	9	88	CHRON OBSTRUCT PULM	9
198	CHOLECYSTECTOMY <70	1	98	BRONCHITIS/ASTHMA 0-	4	188	OTH DIGEST DX >69-CC	9	188	OTH DIGEST DX >69-CC	9
358	UTERUS PROC-NONMALIG	1	62	MYRINGOTOMY-TUBE 0-1	4	106	CORONARY BYPASS-CATH	8	6	CARPAL TUNNEL RELEAS	9
370	C SECTION W CC	1	387	PREMATURITY-MAJ PROB	3	127	HEART FAILURE/SHOCK	8	296	NUTRI DISORDS >69-CC	8
266	GRAFT-SKIN ULCER WO CC	1	167	APPEND/NO COMP <70	3	468	UNRELATED OR PROCS	8	127	HEART FAILURE/SHOCK	7
290	THYROID PROCEDURES	1	371	C SECTION WO CC	3	395	RED BLOOD CELL DIS >	8	395	RED BLOOD CELL DIS >	7
89	PNEUMONIA/PLEUR >69-CC	1	252	ARM/HAND/FT FRACT 0-	3	154	STOMACH PROCS >69-CC	7	89	PNEUMONIA/PLEUR >69-	7
371	C SECTION WO CC	1	60	TONSILEC/ADENOIDECC 0	3	121	CIRC DIS-CV-DISCHG A	7	189	OTH DIGEST DX 18-69	7
368	F REPRO SYS INFECTS	1	362	LAPAROSCOPIC TUBAL I	3	122	CIRC DIS-CV-DISCHG A	7	358	UTERUS PROC-NONMALIG	6
369	MENSTRUAL DISORDERS	1	381	ABORTION W D&C	3	124	CIRC DIS-CATH,COMPL	7	258	TOT MASTECT-MALIG <7	6
365	OTH F REPRO OR PROCS	1	3	CRANIOTOMY <18	2	204	PANCREAS DIS EXC MAL	7	138	CONDUCT DISORD >69-C	6
468	UNRELATED OR PROCS	1	266	GRAFT-SKIN ULCER WO	2	162	ING/FEM HERN 18-69	7	268	PLAS PROCS-SKIN/BREA	6
208	BILIARY TRACT DIS <70	1	358	UTERUS PROC-NONMALIG	2	144	OTH CIRC SYS DX W CC	7	391	NORMAL NEWBORN	6
97	BRONCHITIS 18-69 WO CC	1	224	UP EXTREM PROCS <70	2	158	ANAL PROCS <70 WO CC	7	25	SEIZUR/HEAD 18-69 WO	6
231	REM OTH INT DEVICES	1	268	PLAS PROCS-SKIN/BREA	2	209	MAJ JT/LIMB REATTACH	6	40	EXTRAOCUL EXC ORBIT	6

Note. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 48

WHMC Catchment Area Beneficiaries Treated at Other DoD Medical Treatment Facilities

ACTIVE DUTY			ACTIVE DUTY DEP			RETIRED			RET DEPN/SURV/OTH		
DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP
243	MEDICAL BACK PROBLEM	5	391	NORMAL NEWBORN	8	132	ARTHEROSCLEROSIS >69	2	323	URINARY STONES >69-C	2
69	OTITIS MED 18-69 WO	4	372	VAG DELIV W COMPL DX	2	124	CIRC DIS-CATH,COMPL	2	143	CHEST PAIN	2
222	KNEE PROCS <70 WO CC	3	371	C SECTION WO CC	2	9	SPINAL DISORD/INJURI	1	455	OTH INJ/POISON <70	2
254	UPARM/LEG FRACT 18-6	3	389	FULL TERM W MAJ PROB	1	151	PERITONEAL <70 WO CC	1	197	CHOLECYSTECTOMY >69-	1
430	PSYCHOSES	2	145	OTH CIRC SYS DX WO C	1	14	CEREBVASC DIS EXC TI	1	89	PNEUMONIA/PLEUR >69-	1
468	UNRELATED OR PROCS	2	158	ANAL PROCS <70 WO CC	1	175	GI HEMORRHAGE <70 WO	1	324	URINARY STONES <70	1
131	VASC DISORD <70 WO C	2	452	COMP OF TREAT >69-CC	1	127	HEART FAILURE/SHOCK	1	88	CHRON OBSTRUCT PULM	1
229	OTH HAND PROCEDURES	2	278	CELLULITIS 18-69	1	253	UPARM/LEG FRACT >69-	1	281	SKIN TRAUMA 18-69	1
56	RHINOPLASTY	2	167	APPEND/NO COMP <70	1	174	GI HEMORRHAGE >69-CC	1	125	CIRC DIS-CARD CATH	1
59	TONSILEC/ADENOIDEA >	2	374	VAG DELIV W STERIL/D	1	140	ANGINA PECTORIS	1	183	MISC DIGEST DIS 18-6	1
434	SUB ABUSE-SYMPT TREA	2	98	BRONCHITIS/ASTHMA 0-	1	126	ACUTE ENDOCARDITIS	1	172	DIGEST MALIG >69-CC	1
183	MISC DIGEST DIS 18-6	2	390	NEONATE W OTH SIG PR	1	24	SEIZURE/HEADACHE >69	1	23	NONTRAUM STUPOR/COMA	1
143	CHEST PAIN	2	184	MISC DIGEST DIS 0-17	1	419	FEV-UNKNOWN ORIG >69-	1	284	MIN SKIN DISORD <70	1
435	DETOX/OTH SYMPT TREA	1	139	CONDUCT DIS <70 WO C	1	143	CHEST PAIN	1			
437	COMB REHAB/DETOX THE	1	379	THREATENED ABORTION	1	395	RED BLOOD CELL DIS >	1			
426	DEPRESSIVE NEUROSES	1	322	KIDNEY INFECTION 0-17	1	208	BILIARY TRACT DIS <7	1			
466	AFTERCARE WO MALIG	1	422	VIR ILL UNKN ORIG 0-	1						
228	GANGLION PROCEDURES	1	284	MIN SKIN DISORD <70	1						
138	CONDUCT DISORD >69-C	1									
169	MOUTH PROCS <70	1									
166	APPEND/NO COMP >69	1									
73	OTH EAR/NOSE/THRT DX	1									
283	MIN SKIN DISORD >69-	1									
136	VALV DISOR 18-69 WO	1									
467	OTH FACTORS INFL HLT	1									

Note. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 49

WHMC Catchment Area Beneficiaries Treated by CHAMPUS Providers

ACTIVE DUTY			ACTIVE DUTY DEP		RETIRED		RET DEPN/SURV/OTH	
DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP
Not Applicable			430	PSYCHOSES	44	435	DETOX/OTH SYMPT TREA	9
			426	DEPRESSIVE NEUROSES	31	430	PSYCHOSES	9
			431	CHILDHOOD MENTAL DIS	17	462	REHABILITATION	4
			435	DETOX/OTH SYMPT TREA	8	416	SEPTICEMIA >17	4
			427	NEUROSES EXC DEPRESS	8	214	BACK/NECK PROCS >69-	3
			428	PERSONALITY DISORDER	6	324	URINARY STONES <70	3
			434	SUB ABUSE-SYMPT TREA	6	468	UNRELATED OR PROCS	3
			391	NORMAL NEWBORN	6	75	MAJOR CHEST PROCEDUR	2
			98	BRONCHITIS/ASTHMA 0-	3	175	GI HEMORRHAGE <70 NO	2
			108	CARDVASC/THORAC-PUMP	2	97	BRONCHITIS 18-69 NO	2
			462	REHABILITATION	2	4	SPINAL PROCEDURES	1
			208	NUTRI DISORDS 0-17	2	148	S/L BOWEL PROCS >69-	1
			429	ORGANIC DISTURBANCES	2	110	RECON VASC PROC >69-	1
			91	PNEUMONIA/PLEURISY 0	2	108	CARDVASC/THORAC-PUMP	1
			461	OR PROC-DX OTH CONT	2	14	CEREBVASC DIS EXC TI	1
			183	MISC DIGEST DIS 18-6	2	90	PNEUM/PLEUR 18-69 NO	1
			148	S/L BOWEL PROCS >69-	1	217	DEBRID-MUSCSKELET SY	1
			458	NONEXT BURNS-SKIN GR	1	124	CIRC DIS-CATH,COMPL	1
			81	RESP INFECT/INFLAM 0	1	107	CORONARY BYPASS	1
			130	VASC DISORDER >69-CC	1	277	CELLULITIS >69-CC	1
			425	PSYCHOSOCIAL DISFUNC	1	121	CIRC DIS-CV-DISCHG A	1
			243	MEDICAL BACK PROBLEM	1	149	BOWEL PROCS <70 NO C	1
			432	OTHER MENTAL DISORD	1	174	GI HEMORRHAGE >69-CC	1
			26	SEIZURE/HEADACHE 0-1	1	122	CIRC DIS-CV-DISCHG A	1
			288	OR PROCEDURES-OBESIT	1	157	ANAL PROCS >69-CC	1
			430	PSYCHOSES	52	430	PSYCHOSES	52
			426	DEPRESSIVE NEUROSES	20	426	DEPRESSIVE NEUROSES	20
			435	DETOX/OTH SYMPT TREA	10	435	DETOX/OTH SYMPT TREA	10
			431	CHILDHOOD MENTAL DIS	8	431	CHILDHOOD MENTAL DIS	8
			434	SUB ABUSE-SYMPT TREA	7	434	SUB ABUSE-SYMPT TREA	7
			427	NEUROSES EXC DEPRESS	5	427	NEUROSES EXC DEPRESS	5
			428	PERSONALITY DISORDER	4	428	PERSONALITY DISORDER	4
			395	RED BLOOD CELL DIS >	4	395	RED BLOOD CELL DIS >	4
			138	CONDUCT DISORD >69-C	3	138	CONDUCT DISORD >69-C	3
			89	PNEUMONIA/PLEUR >69-	3	89	PNEUMONIA/PLEUR >69-	3
			96	BRONCHITIS/ASTH >69-	3	96	BRONCHITIS/ASTH >69-	3
			359	TUBAL INTER-NORMALIG	3	359	TUBAL INTER-NORMALIG	3
			140	ANGINA PECTORIS	3	140	ANGINA PECTORIS	3
			214	BACK/NECK PROCS >69-	2	214	BACK/NECK PROCS >69-	2
			14	CEREBVASC DIS EXC TI	2	14	CEREBVASC DIS EXC TI	2
			63	OTH EAR/NOSE/THROAT	2	63	OTH EAR/NOSE/THROAT	2
			215	BACK/NECK PROCS <70	2	215	BACK/NECK PROCS <70	2
			421	VIRAL ILLNESS >17	2	421	VIRAL ILLNESS >17	2
			180	GI OBSTRUCTION >69-C	2	180	GI OBSTRUCTION >69-C	2
			296	NUTRI DISORDS >69-CC	2	296	NUTRI DISORDS >69-CC	2
			183	MISC DIGEST DIS 18-6	2	183	MISC DIGEST DIS 18-6	2
			449	POISONING >69-CC	2	449	POISONING >69-CC	2
			125	CIRC DIS-CARD CATH	2	125	CIRC DIS-CARD CATH	2
			24	SEIZURE/HEADACHE >69	2	24	SEIZURE/HEADACHE >69	2
			297	NUTRI DISORDS 18-69	2	297	NUTRI DISORDS 18-69	2

Note. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 50

Top Twenty Five DRGs for DoD Beneficiaries Treated in DoD Medical Facilities(Excluding WHMC Catchment Area Beneficiaries)

ACTIVE DUTY		ACTIVE DUTY DEP		RETIRED		RET DEPN/SURV/OTH	
DRG TITLE	DISP	DRG TITLE	DISP	DRG TITLE	DISP	DRG TITLE	DISP
187 DENTAL EXTRACT/RESTO	10,998	391 NORMAL NEWBORN	63,298	39 LENS PROCS W/NO VITR	2,539	391 NORMAL NEWBORN	4,417
183 MISC DIGEST DIS 18-6	10,904	373 VAG DELIV WO COMPL D	47,449	162 ING/FEM HERN 18-69	2,489	373 VAG DELIV WO COMPL D	3,467
421 VIRAL ILLNESS >17	10,211	390 NEONATE W OTH SIG PR	10,572	125 CIRC DIS-CARD CATH	2,204	183 MISC DIGEST DIS 18-6	2,686
69 OTITIS MED 18-69 WO	10,145	371 C SECTION WO CC	9,918	143 CHEST PAIN	2,044	262 BREAST BIOP NON-MALI	2,459
373 VAG DELIV WO COMPL D	10,004	383 OTH ANTEPART DX W CO	7,582	88 CHRON OBSTRUCT PULM	2,013	359 TUBAL INTER-NONMALIGN	2,197
243 MEDICAL BACK PROBLEM	7,428	467 OTH FACTORS INFL HLT	7,303	183 MISC DIGEST DIS 18-6	1,990	39 LENS PROCS W/NO VITR	2,154
222 KNEE PROCS <70 WO CC	7,238	379 THREATENED ABORTION	7,252	122 CIRC DIS-CV-DISCHG A	1,569	143 CHEST PAIN	1,814
231 REM OTH INT DEVICES	6,131	389 FULL TERM W MAJ PROB	6,091	127 HEART FAILURE/SHOCK	1,547	364 DAC EXCEPT MALIGNANC	1,752
162 ING/FEM HERN 18-69	6,117	384 OTH ANTEPART DX WO CO	5,958	140 ANGINA PECTORIS	1,521	182 MISC DIGEST DIS >69-	1,537
430 DETOX/OTH SYMPT TREA	5,048	98 BRONCHITIS/ASTHMA 0-	5,778	182 MISC DIGEST DIS >69-	1,353	88 CHRON OBSTRUCT PULM	1,503
427 NEUROSES EXC DEPRESS	4,243	381 ABORTION W DAC	5,390	467 OTH FACTORS INFL HLT	1,240	467 OTH FACTORS INFL HLT	1,494
426 DEPRESSIVE NEUROSES	3,665	359 TUBAL INTER-NONMALIGN	5,188	138 CONDUCT DISORD >69-C	1,207	468 UNRELATED OR PROCS	1,212
229 OTH HAND PROCEDURES	3,516	361 F LAPAROSC EXC TUB I	4,993	82 RESPIRATORY NEOPLASM	1,201	198 CHOLECYSTECTOMY <70	1,203
467 OTH FACTORS INFL HLT	3,449	62 MYRINGOTOMY-TUBE 0-1	4,733	468 UNRELATED OR PROCS	1,195	125 CIRC DIS-CARD CATH	1,029
254 UPARM/LEG FRACT 18-6	3,373	184 MISC DIGEST DIS 0-17	4,683	189 OTH DIGEST DX 18-69	1,187	410 CHEMOTHERAPY	1,028
351 MALE STERILIZATION	3,190	372 VAG DELIV W COMPL DX	4,561	158 ANAL PROCS <70 WO CC	1,180	97 BRONCHITIS 18-69 WO	999
278 CELLULITIS 18-69	3,075	183 MISC DIGEST DIS 18-6	3,611	89 PNEUMONIA/PLEUR >69-	1,083	276 NONMALIGN BREAST DISO	951
434 SUB ABUSE-SYMPT TREA	3,057	70 OTITIS MEDIA & URI 0	3,496	336 TRANSUR PROSTAT >69-	1,012	127 HEART FAILURE/SHOCK	943
225 FOOT PROCEDURES	2,975	370 C SECTION W CC	3,173	161 ING/FEM HERN >69-CC	988	294 DIABETES >35	929
436 SUB ABUSE-REHAB THER	2,965	163 HERN PROCS 0-17	2,806	294 DIABETES >35	981	270 OTH SKIN PLAS PROC <	901
56 RHINOPLASTY	2,955	91 PNEUMONIA/PLEURISY 0	2,805	132 ARTEROSCLEROSIS >69	915	243 MEDICAL BACK PROBLEM	900
232 ARTHROSCOPY	2,937	362 LAPAROSCOPIC TUBAL I	2,566	410 CHEMOTHERAPY	901	140 ANGINA PECTORIS	864
430 PSYCHOSES	2,718	422 VIR ILL UNKN ORIG 0-	2,549	337 TRANSUR PROSTATECT <	858	89 PNEUMONIA/PLEUR >69-	831
25 SEIZUR/HEAD 18-69 WO	2,682	374 VAG DELIV W STERIL/D	2,416	14 CEREBVASC DIS EXC TI	825	138 CONDUCT DISORD >69-C	816
428 PERSONALITY DISORDER	2,668	60 TONSILEC/ADENOIDECC 0	2,360	243 MEDICAL BACK PROBLEM	793	390 NEONATE W OTH SIG PR	812

Note. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 51

Top Twenty Five DRGs for DoD Beneficiaries Treated Through CHAMPUS(Excluding WHMC Catchment Area Beneficiaries)

ACTIVE DUTY			ACTIVE DUTY DEP		RETIRED		RET DEPN/SURV/OTH	
DRG	TITLE	DISP	DRG	TITLE	DISP	DRG	TITLE	DISP
Not Applicable			391	NORMAL NEWBORN	42,085	122	CIRC DIS-CV-DISCHG A	1,354
			373	VAG DELIV WO COMPL D	29,287	140	ANGINA PECTORIS	1,305
			371	C SECTION WO CC	8,567	112	OTHER VASCULAR PROCS	1,258
			430	PSYCHOSES	5,842	435	DETOX/OTH SYMPT TREA	1,023
			383	OTH ANTEPART DX W CO	2,791	143	CHEST PAIN	1,019
			98	BRONCHITIS/ASTHMA 0-	2,781	125	CIRC DIS-CARD CATH	968
			359	TUBAL INTER-NONMALIGN	2,780	430	PSYCHOSES	829
			372	VAG DELIV W COMPL DX	2,380	410	CHEMOTHERAPY	725
			374	VAG DELIV W STERIL/D	2,379	468	UNRELATED OR PROCS	656
			426	DEPRESSIVE NEUROSES	2,355	124	CIRC DIS-CATH, COMPL	622
			468	UNRELATED OR PROCS	2,331	14	CEREBVASC DIS EXC TI	613
			379	THREATENED ABORTION	2,325	127	HEART FAILURE/SHOCK	588
			370	C SECTION W CC	2,098	107	CORONARY BYPASS	579
			184	MISC DIGEST DIS 0-17	1,969	215	BACK/NECK PROCS <70	561
			91	PNEUMONIA/PLEURISY 0	1,947	243	MEDICAL BACK PROBLEM	536
			390	NEONATE W OTH SIG PR	1,781	106	CORONARY BYPASS-CATH	524
			431	CHILDHOOD MENTAL DIS	1,566	183	MISC DIGEST DIS 18-6	502
			435	DETOX/OTH SYMPT TREA	1,422	182	MISC DIGEST DIS >69-	423
			384	OTH ANTEPART DX WO CO	1,072	121	CIRC DIS-CV-DISCHG A	418
			427	NEUROSES EXC DEPRESS	998	139	CONDUCT DIS <70 WO C	411
			388	PREMATURITY WO MAJ P	958	89	PNEUMONIA/PLEUR >69-	409
			26	SEIZURE/HEADACHE 0-1	946	324	URINARY STONES <70	406
			60	TONSILITIS/ADENOITIS 0	943	337	TRANSUR PROSTATECT <	377
			389	FULL TERM W MAJ PROB	938	96	BRONCHITIS/ASTH >69-	370
			298	NUTRI DISORDS 0-17	866	82	RESPIRATORY NEOPLASM	368
						358	UTERUS PROC-NONMALIGN	525

Note . FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 52

Twenty Five Most Frequent DRGs, Ranked by all Medicare Inpatient Discharges,
for Patients Treated in U.S. Hospitals

DRG	TITLE	DISP
127	HEART FAILURE AND SHOCK	541,657
140	ANGINA PECTORIS	360,008
89	SIMPLE PNEUMONIA AND PLEURISY, W/CC, > 17	352,950
14	SPECIFIC CEREBROVASCULAR DISORDERS EXCEPT TIA	334,849
430	PSYCHOSES	254,685
182	ESOPHAGITIS AND MISC DIGESTIVE DISORDERS, W/CC, > 17	248,859
96	BRONCHITIS AND ASTHMA, W/CC, > 17	218,041
209	MAJOR JOINT AND LIMB REATTACHMENT PROCEDURES	215,135
296	NUTRITIONAL AND MISC METABOLIC DISORDERS, W/CC, > 17	195,773
138	CARDIAC ARRHYTHMIA AND CONDUCTION DISORDERS, W/CC	180,685
121	CIRCULATORY DISORDERS W/ ACUTE MI AND CARDIOVASCULAR COMPLICATIONS; PATIENT DISCHARGED ALIVE	146,988
320	KIDNEY AND URINARY TRACT INFECTIONS, W/CC, > 17	146,986
174	GASTROINTESTINAL HEMORRHAGE, W/CC	141,770
410	CHEMOTHERAPY	141,072
15	TRANSIENT ISCHEMIC ATTACK AND PRECEREBRAL OCCLUSIONS	139,845
148	MAJOR SMALL AND LARGE BOWEL PROCEDURES, W/CC	132,111
243	MEDICAL BACK PROBLEMS	123,042
122	CIRCULATORY DISORDERS W/ ACUTE MI WITHOUT CARDIOVASCULAR COMPLICATIONS; PATIENT DISCHARGED ALIVE	121,562
112	VASCULAR PROCEDURES EXCEPT MAJOR RECONSTRUCTION W/O VASCULAR PUMP	118,534
416	SEPTICEMIA, > 17	113,923
79	RESPIRATORY INFECTIONS AND INFLAMMATIONS, W/CC, > 17	112,976
336	TRANSURETHRAL PROSTATECTOMY, W/CC	106,496
143	CHEST PAIN	102,575
210	HIP AND FEMUR PROBLEMS, EXCEPT MAJOR JOINT, W/CC, > 17	102,272
125	CIRCULATORY DISORDERS, EXCEPT ACUTE MI, W/CARDIAC CATH, W/O COMPLEX DIAGNOSES	97,082

Note. From "Desktop Resource" by J. Diemunsch, 1991, Healthweek, 5(8), p. 20.

Table 53

Twenty Five Most Frequent Illnesses for the U.S. Population, Ranked by Bed Days

ASSOCIATED DRGs	ILLNESS OR INJURY	BED DAYS
421	INFLUENZA	262,880
100	COMMON COLD	71,938
423	OTHER INFECTIVE & PARASITIC DISEASES	39,991
250-256,440-446	OTHER CURRENT INJURIES	35,919
250-256,440-446	FRACTURES & DISLOCATIONS	33,551
370-384	DELIVERY & OTHER CONDITIONS OF PREGNANCY & PUERPERIUM	31,305
79,80,81,89,90,91	PNEUMONIA	30,587
250-256,440-446	SPRAINS & STRAINS	26,541
79,80,81,101,102	OTHER ACUTE UPPER RESPIRATORY INFECTIONS	23,503
68,69,70	ACUTE EAR INFECTIONS	22,417
421	VIRAL INFECTIONS, UNSPECIFIED	22,387
209-256,471	ACUTE MUSCULOSKELETAL CONDITIONS	21,035
188,189,190	OTHER DIGESTIVE CONDITIONS	20,229
96,97,98	ACUTE BRONCHITIS	19,370
250-256,440-446	CONTUSIONS & SUPERFICIAL INJURIES	15,637
302-333	ACUTE URINARY CONDITIONS	14,488
423	INTESTINAL VIRUS, UNSPECIFIED	13,309
250-256,440-446	OPEN WOUNDS & LACERATIONS	12,620
78,82,85-88,92-95	OTHER RESPIRATORY CONDITIONS	11,438
422	COMMON CHILDHOOD DISEASES	10,277
182,183,184	INDIGESTION, NAUSEA, & VOMITING	6,957
272,273,283,284	SKIN CONDITIONS	6,083
24,25,26	HEADACHE, EXCEPT MIGRAINE	5,785
220,221,419,420	FEVER, UNSPECIFIED	5,463
61,62,63,73,74	OTHER EAR CONDITIONS	3,212

Note 1. From "Current Estimates from the National Health Interview Survey" by P. F. Adams and V. Benson, 1990, Hyattsville MD: National Center for Health Statistics.

Note 2. Associated DRGs were assigned by matching the illness/injury to specific conditions listed in the "Air Force Physician's DRM Working Guidebook" by E. W. Lorenz and M. K. Jones, 1989, Washington D.C.: St. Anthony Hospital Publications.

Table 54

Comparison of the Top Twenty Five DRGs for WHMC Patients and DoD Beneficiaries

WHMC ACTIVE DUTY		DoD ACTIVE DUTY		WHMC ACTIVE DUTY DEPN		DoD ACTIVE DUTY DEPN	
DRG TITLE	DISP	DRG TITLE	DISP	DRG TITLE	DISP	DRG TITLE	DISP
487 OTH FACTORS INFL HL	276	187 DENTAL EXTRACT/RESTO	10,098	391 NORMAL NEWBORN	1,014	391 NORMAL NEWBORN	63,298
427 NEUROSES EXC DEPRES	252	183 MISC DIGEST DIS 18-6	10,004	373 VAG DELIV WO COMPL D	892	373 VAG DELIV WO COMPL	47,440
373 VAG DELIV WO COMPL	232	421 VIRAL ILLNESS >17	10,211	389 FULL TERM W MAJ PROB	160	389 NEONATE W OTH SIG P	10,572
388 IMMUNITY DISOR >69-	229	89 OTITIS MED 18-69 WO	10,145	388 NEONATE W OTH SIG PR	123	371 C SECTION WO CC	9,918
421 VIRAL ILLNESS >17	210	373 VAG DELIV WO COMPL D	10,004	187 DENTAL EXTRACT/RESTO	120	383 OTH ANTEPART DX W C	7,582
187 DENTAL EXTRACT/REST	207	243 MEDICAL BACK PROBLEM	7,428	487 OTH FACTORS INFL HLT	119	487 OTH FACTORS INFL HL	7,303
243 MEDICAL BACK PROBLE	197	222 KNEE PROCS <70 WO CC	7,238	62 MYRINGOTOMY-TUBE 0-1	112	378 THREATENED ABORTION	7,252
435 DETOX/OTH SYMPT TRE	191	231 REN OTH INT DEVICES	6,131	488 UNRELATED OR PROCS	109	389 FULL TERM W MAJ PRO	6,091
183 MISC DIGEST DIS 18-	156	162 ING/FEM HERN 18-69	6,117	372 VAG DELIV W COMPL DX	101	384 OTH ANTEPAR DX WO C	5,958
466 AFTERCARE WO MALIG	131	438 DETOX/OTH SYMPT TREA	5,048	359 TUBAL INTER-NORMALIG	101	98 BRONCHITIS/ASTHMA 0	5,778
423 URINARY STONES >69-	107	427 NEUROSES EXC DEPRESS	4,243	381 ABORTION W SAC	94	381 ABORTION W SAC	5,390
426 DEPRESSIVE NEUROSES	103	426 DEPRESSIVE NEUROSES	3,665	102 RESP SYS DX <70 WO C	88	359 TUBAL INTER-NORMALI	5,188
430 PSYCHOSES	102	229 OTH HAND PROCEDURES	3,516	384 OTH ANTEPAR DX WO CO	84	361 F LAPAROSC EXC TUB	4,993
215 BACK/NECK PROCS <70	102	487 OTH FACTORS INFL HLT	3,449	184 MISC DIGEST DIS 0-17	82	62 MYRINGOTOMY-TUBE 0-	4,733
278 CELLULITIS 18-69	99	254 UPARM/LEG FRACT 18-6	3,373	378 THREATENED ABORTION	81	184 MISC DIGEST DIS 0-1	4,683
25 SEIZURE/HEAD 18-69 W	95	351 MALE STERILIZATION	3,190	41 EXTRAOCU EXC ORBIT 0	78	372 VAG DELIV W COMPL D	4,561
468 UNRELATE OR PROCS	90	278 CELLULITIS 18-69	3,075	388 PREMATUREITY WO MAJ P	69	183 MISC DIGEST DIS 18-	3,611
222 KNEE PROCS <70 WO C	87	434 SUB ABUSE-SYMPT TREA	3,057	55 MISC EAR/NOSE/THROAT	68	70 OTITIS MEDIA & URI	3,496
162 ING/FEM HERN 18-69	85	225 FOOT PROCEDURES	2,975	371 C SECTION WO CC	65	370 C SECTION W CC	3,173
125 CIRC DIS-CARD CATH	75	436 SUB ABUSE-REHAB THER	2,965	383 OTH ANTEPART DX W CO	64	163 HERN PROCS 0-17	2,806
89 OTITIS MED 18-69 WO	73	56 RHINOPLASTY	2,955	387 PREMATUREITY-MAJ PROB	63	91 PNEUMONIA/PLEURISY	2,805
169 MOUTH PROCS <70	66	232 ARTHROSCOPY	2,937	381 F LAPAROSC EXC TUB I	58	362 LAPAROSCOPIC TUBAL	2,566
56 RHINOPLASTY	64	430 PSYCHOSES	2,718	91 PNEUMONIA/PLEURISY 9	57	422 VIR ILL UNKN ORIG 0	2,549
339 TESTES PROCS-NONMAL	53	25 SEIZURE/HEAD 18-69 WO	2,682	98 BRONCHITIS/ASTHMA 0-	56	374 VAG DELIV W STERIL/	2,416
229 OTH HAND PROCEDURES	52	428 PERSONALITY DISORDER	2,668	66 TONSILEC/ADENOIDEC 9	55	66 TONSILEC/ADENOIDEC	2,360

Note: FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 54 (Continued)

Comparison of the Top Twenty Five DRGs for WHMC Patients and DoD Beneficiaries

WHMC		DoD		WHMC		DoD	
RETIRED		RETIRED		RET DEPN/SURV/OTH		RET DEPN/SURV/OTH	
DRG TITLE	DISP	DRG TITLE	DISP	DRG TITLE	DISP	DRG TITLE	DISP
123 CIRC DIS-CARD CATH	254	30 LENS PROCS W/NO VITRE	2,539	468 UNRELATED OR PROCS	167	391 NORMAL NEWBORN	4,417
30 LENS PROCS W/NO VIT	175	162 ING/FEM HERN 18-69	2,489	30 LENS PROCS W/NO VITRE	151	373 VAG DELIV NO COMPL DX	3,467
112 OTHER VASCULAR PROC	141	123 CIRC DIS-CARD CATH	2,204	391 NORMAL NEWBORN	139	183 MISC DIGEST DIS 18-69	2,686
468 UNRELATED OR PROCS	131	143 CHEST PAIN	2,044	410 CHEMOTHERAPY	131	262 BREAST BIOP NON-MALIG	2,459
143 CHEST PAIN	120	88 CHRON OBSTRUCT PULM D	2,013	123 CIRC DIS-CARD CATH	125	356 TUBAL INTER-NORMALIG	2,197
467 OTH FACTORS INFL HL	116	183 MISC DIGEST DIS 18-69	1,990	373 VAG DELIV NO COMPL D	120	30 LENS PROCS W/NO VITRE	2,154
162 ING/FEM HERN 18-69	110	122 CIRC DIS-CV-DISCHG AL	1,569	143 CHEST PAIN	113	143 CHEST PAIN	1,814
82 RESPIRATORY NEOPLAS	104	127 HEART FAILURE/SHOCK	1,547	356 TUBAL INTER-NORMALIG	101	364 D&C EXCEPT MALIGNANCY	1,752
122 CIRC DIS-CV-DISCHG	97	140 ANGINA PECTORIS	1,521	183 MISC DIGEST DIS 18-6	100	182 MISC DIGEST DIS >69-C	1,537
410 CHEMOTHERAPY	93	182 MISC DIGEST DIS >69-C	1,353	88 CHRON OBSTRUCT PULM	81	88 CHRON OBSTRUCT PULM D	1,503
398 IMMUNITY DISOR >69-	85	467 OTH FACTORS INFL HLTH	1,240	262 BREAST BIOP NON-MALI	79	467 OTH FACTORS INFL HLTH	1,494
06 CORONARY BYPASS-CAT	82	138 CONDUCT DISORD >69-CC	1,207	430 PSYCHOSES	74	468 UNRELATED OR PROCS	1,212
138 CONDUCT DISORD >69-	81	82 RESPIRATORY NEOPLASMS	1,201	276 NONMALIG BREAST DISO	74	198 CHOLECTESTECTOMY <70	1,203
243 MEDICAL BACK PROBLE	73	468 UNRELATED OR PROCS	1,195	182 MISC DIGEST DIS >69-	73	123 CIRC DIS-CARD CATH	1,029
107 CORONARY BYPASS	72	169 OTH DIGEST DX 18-69	1,187	243 MEDICAL BACK PROBLEM	72	410 CHEMOTHERAPY	1,028
435 DETOX/OTH SYMPT TRE	72	158 ANAL PROCS <70 WO CC	1,180	364 D&C EXCEPT MALIGNANC	72	97 BRONCHITIS 18-69 WO C	999
323 URINARY STONES >69-	72	89 PNEUMONIA/PLEUR >69-C	1,083	198 CHOLECTESTECTOMY <70	71	276 NONMALIG BREAST DISOR	951
14 CEREBVASC DIS EXC T	70	336 TRANSUR PROSTAT >69-C	1,012	467 OTH FACTORS INFL HLT	68	127 HEART FAILURE/SHOCK	943
88 CHRON OBSTRUCT PULM	70	161 ING/FEM HERN >69-CC	988	127 HEART FAILURE/SHOCK	64	294 DIABETES >35	929
183 MISC DIGEST DIS 18-	70	294 DIABETES >35	981	82 RESPIRATORY NEOPLASM	63	270 OTH SKIN PLAS PROC <7	901
139 CONDUCT DIS <70 WO	69	132 ARTEROSCLEROSIS >69	915	360 VAGINA/CERV/VULV PRO	63	243 MEDICAL BACK PROBLEMS	900
182 MISC DIGEST DIS >69	66	410 CHEMOTHERAPY	901	14 CEREBVASC DIS EXC TI	61	140 ANGINA PECTORIS	864
132 ARTEROSCLEROSIS >6	65	237 TRANSUR PROSTATECT <7	858	261 BREAST PROC NON-MALI	59	89 PNEUMONIA/PLEUR >69-C	831
127 HEART FAILURE/SHOCK	65	14 CEREBVASC DIS EXC TIA	825	187 DENTAL EXTRACT/RESTO	59	138 CONDUCT DISORD >69-CC	816
337 TRANSUR PROSTATECT	64	243 MEDICAL BACK PROBLEMS	793	112 OTHER VASCULAR PROCS	57	390 NEONATE W OTH SIG PRO	812

Note. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 55

Comparison of the Top Twenty Five DRGs for WHMC Catchment Area Beneficiaries and
and DoD Beneficiaries Seen Through CHAMPUS

WHMC		DoD		WHMC		DoD	
ACTIVE DUTY DEPN		ACTIVE DUTY DEPN		RET DEPN/SURV/OTH		RET DEPN/SURV/OTH	
DRG TITLE	DISP	DRG TITLE	DISP	DRG TITLE	DISP	DRG TITLE	DISP
430 PSYCHOSES	44	391 NORMAL NEWBORN	42,085	430 PSYCHOSES	32	430 PSYCHOSES	4,354
426 DEPRESSIVE NEUROSES	31	373 VAG DELIV WO COMPL	29,287	426 DEPRESSIVE NEUROSES	20	391 NORMAL NEWBORN	4,316
431 CHILDHOOD MENTAL DI	17	371 C SECTION WO CC	8,567	435 DETOX/OTH SYMPT TREA	10	373 VAG DELIV WO COMPL D	1,743
435 DETOX/OTH SYMPT TREA	8	430 PSYCHOSES	5,842	431 CHILDHOOD MENTAL DIS	8	359 TUBAL INTER-NONMALIG	1,742
427 NEUROSES EXC DEPRES	8	383 OTH ANTEPART DX W C	2,791	434 SUB ABUSE-SYMPT TREA	7	410 CHEMOTHERAPY	1,348
428 PERSONALITY DISORDE	6	98 BRONCHITIS/ASTHMA 0	2,781	427 NEUROSES EXC DEPRESS	5	426 DEPRESSIVE NEUROSES	1,228
434 SUB ABUSE-SYMPT TREA	6	359 TUBAL INTER-NONMALI	2,780	428 PERSONALITY DISORDER	4	185 MISC DIGEST DIS 18-61	1,225
391 NORMAL NEWBORN	6	372 VAG DELIV W COMPL D	2,380	395 RED BLOOD CELL DIS >	4	435 DETOX/OTH SYMPT TREA	1,214
98 BRONCHITIS/ASTHMA 0	3	374 VAG DELIV W STERIL/	2,379	138 CONDUCT DISORD >69-C	3	143 CHEST PAIN	1,211
98 CARDVASC/THORAC-PUM	2	426 DEPRESSIVE NEUROSES	2,355	89 PNEUMONIA/PLEUR >69-	3	140 ANGINA PECTORIS	1,052
462 REHABILITATION	2	468 UNRELATED OR PROCS	2,331	98 BRONCHITIS/ASTH >69-	3	243 MEDICAL BACK PROBLEM	1,009
298 NUTRI DISORDS 0-17	2	379 THREATENED ABORTION	2,325	359 TUBAL INTER-NONMALIG	3	468 UNRELATED OR PROCS	927
429 ORGANIC DISTURBANCE	2	370 C SECTION W CC	2,098	140 ANGINA PECTORIS	3	182 MISC DIGEST DIS >69-	915
91 PNEUMONIA/PLEURISY	2	184 MISC DIGEST DIS 0-1	1,969	214 BACK/NECK PROCS >69-	2	125 CIRC DIS-CARD CATH	893
461 OR PROC-DX OTH CONT	2	91 PNEUMONIA/PLEURISY	1,947	14 CEREBVASC DIS EXC TI	2	198 CHOLECYSTECTOMY <70	797
183 MISC DIGEST DIS 18-	2	390 NEONATE W OTH SIG P	1,781	63 OTH EAR/NOSE/THROAT	2	98 BRONCHITIS/ASTH >69-	756
148 S/L BOWEL PROCS >69	1	431 CHILDHOOD MENTAL DI	1,566	215 BACK/NECK PROCS <70	2	215 BACK/NECK PROCS <70	733
458 NONEXT BURNS-SKIN G	1	435 DETOX/OTH SYMPT TREA	1,422	421 VIRAL ILLNESS >17	2	97 BRONCHITIS 18-69 WO	678
81 RESP INFECT/INFLAM	1	384 OTH ANTEPAR DX WO C	1,072	180 GI OBSTRUCTION >69-C	2	431 CHILDHOOD MENTAL DIS	608
130 VASC DISORDER >69-C	1	427 NEUROSES EXC DEPRES	998	298 NUTRI DISORDS >69-CC	2	112 OTHER VASCULAR PROCS	581
425 PSYCHOSOCIAL DISFUN	1	388 PREMATURITY WO MAJ	958	183 MISC DIGEST DIS 18-6	2	127 HEART FAILURE/SHOCK	579
243 MEDICAL BACK PROBLE	1	26 SEIZURE/HEADACHE 0-	946	449 POISONING >69-CC	2	371 C SECTION WO CC	563
432 OTHER MENTAL DISORD	1	60 TONSILEC/ADENOIDEA	943	128 CIRC DIS-CARD CATH	2	14 CEREBVASC DIS EXC TI	562
26 SEIZURE/HEADACHE 0-	1	389 FULL TERM W MAJ PRO	938	24 SEIZURE/HEADACHE >69	2	89 PNEUMONIA/PLEUR >69-	547
288 OR PROCEDURES-OBESI	1	298 NUTRI DISORDS 0-17	866	297 NUTRI DISORDS 18-69	2	358 UTERUS PROC-NONMALIG	525

Note . FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 55 (Continued)

Comparison of the Top Twenty Five DRGs for WHMC Catchment Area Beneficiaries and
DoD Beneficiaries Seen Through CHAMPUS

WHMC		DoD	
RETIRED		RETIRED	
DRG TITLE	DISP	DRG TITLE	DISP
435 DETOX/OTH SYMPT TRE	9	122 CIRC DIS-CV-DISCHG	1,354
430 PSYCHOSES	9	140 ANGINA PECTORIS	1,305
462 REHABILITATION	4	112 OTHER VASCULAR PROC	1,258
416 SEPTICEMIA >17	4	435 DETOX/OTH SYMPT TRE	1,023
214 BACK/NECK PROCS >69	3	143 CHEST PAIN	1,019
324 URINARY STONES <70	3	125 CIRC DIS-CARD CATH	968
468 UNRELATED OR PROCS	3	430 PSYCHOSES	829
75 MAJOR CHEST PROCEDU	2	410 CHEMOTHERAPY	725
175 GI HEMORRHAGE <70 NO	2	468 UNRELATED OR PROCS	656
97 BRONCHITIS 18-69 WO	2	124 CIRC DIS-CATH, COMPL	622
4 SPINAL PROCEDURES	1	14 CEREBVASC DIS ETC TI	613
148 S/L BOWEL PROCS >69	1	127 HEART FAILURE/SHOCK	588
110 RECON VASC PROC >69	1	107 CORONARY BYPASS	579
108 CARDVASC/THORAC-PUM	1	215 BACK/NECK PROCS <70	561
14 CEREBVASC DIS ETC T	1	243 MEDICAL BACK PROBLE	536
90 PNEUM/PLEUR 18-69 W	1	106 CORONARY BYPASS-CAT	524
217 DEBRID-MUSCSKELET S	1	183 MISC DIGEST DIS 18-	502
124 CIRC DIS-CATH, COMPL	1	182 MISC DIGEST DIS >69	423
107 CORONARY BYPASS	1	121 CIRC DIS-CV-DISCHG	418
277 CELLULITIS >69-CC	1	139 CONDUCT DIS <70 WO	411
121 CIRC DIS-CV-DISCHG	1	89 PNEUMONIA/PLEUR >69-	409
149 BOWEL PROCS <70 WO	1	324 URINARY STONES <70	406
174 GI HEMORRHAGE >69-CC	1	337 TRANSUR PROSTATECT	377
122 CIRC DIS-CV-DISCHG	1	96 BRONCHITIS/ASTH >69-	370
157 ANAL PROCS >69-CC	1	82 RESPIRATORY NEOPLASM	368

Note . FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Table 56

Comparison of the Top Twenty Five DRGs for WHMC Patients (Retired and Dependents of Retired Personnel) and Medicare Patients Seen in U.S. Hospitals

WHMC RETIRED		WHMC RET DEPN/SURV/OTH		MEDICARE U.S. HOSPITALS	
DRG TITLE	DISP	DRG TITLE	DISP	DRG TITLE	DISP
125 CIRC DIS-CARD CATH	254	468 UNRELATED OR PROCS	167	127 HEART FAILURE/SHOCK	541,657
39 LENS PROCS W/VO VIT	175	39 LENS PROCS W/VO VITREC	151	140 ANGINA PECTORIS	360,008
112 OTHER VASCULAR PROC	141	391 NORMAL NEWBORN	139	89 PNEUMONIA/PLEUR >69-CC	352,950
468 UNRELATED OR PROCS	131	410 CHEMOTHERAPY	131	14 CEREBVASC DIS EXC TIA	334,849
143 CHEST PAIN	120	125 CIRC DIS-CARD CATH	125	430 PSYCHOSES	254,685
467 OTH FACTORS INFL HL	116	373 VAG DELIV WO COMPL DX	120	182 MISC DIGEST DIS >69-CC	248,859
162 ING/FEM HERN 18-69	110	143 CHEST PAIN	113	96 BRONCH & ASTHMA, W/CC,	218,041
82 RESPIRATORY NEOPLAS	104	359 TUBAL INTER-NONMALIGN	101	209 MAJ JT/LIMB REATTACH	215,135
22 CIRC DIS-CV-DISCHG	97	183 MISC DIGEST DIS 18-69	100	298 NUTRI DISORDS >69-CC	195,773
410 CHEMOTHERAPY	93	88 CHRON OBSTRUCT PULM DI	81	138 CONDUCT DISORD >69-CC	180,685
398 IMMUNITY DISOR >69-	85	262 BREAST BIOP NON-MALIGN	79	121 CIRC DIS-CV-DISCHG ALI	146,988
106 CORONARY BYPASS-CAT	82	430 PSYCHOSES	74	320 KIDNEY INFEC >69-CC	146,986
138 CONDUCT DISORD >69-	81	276 NONMALIGN BREAST DISOR	74	174 GI HEMORRAGE >69-CC	141,770
243 MEDICAL BACK PROBLE	73	182 MISC DIGEST DIS >69-CC	73	410 CHEMOTHERAPY	141,072
107 CORONARY BYPASS	72	243 MEDICAL BACK PROBLEMS	72	15 TIA & PRECEREB OCCLUS	139,845
435 DETOX/OTH SYMPT TRE	72	364 D&C EXCEPT MALIGNANCY	72	148 S/L BOWEL PROCS >69-CC	132,111
323 URINARY STONES >69-	72	198 CHOLECYSTECTOMY <70	71	243 MEDICAL BACK PROBLEMS	123,042
14 CEREBVASC DIS EXC T	70	467 OTH FACTORS INFL HLTH	68	122 CIRC DIS-CV-DISCHG ALI	121,562
88 CHRON OBSTRUCT PULM	70	127 HEART FAILURE/SHOCK	64	112 OTHER VASCULAR PROCS	118,534
183 MISC DIGEST DIS 18-	70	82 RESPIRATORY NEOPLASMS	63	416 SEPTICEMIA, > 17	113,923
139 CONDUCT DIS <70 WO	69	360 VAGINA/CERV/VULV PROCS	63	79 RESP INFEC & INFL, >17-	112,976
182 MISC DIGEST DIS >69	66	14 CEREBVASC DIS EXC TIA	61	336 TRANSUR PROSTAT >69-CC	106,496
132 ARTEROSCLEROSIS >6	65	261 BREAST PROC NON-MALIGN	59	143 CHEST PAIN	102,575
127 HEART FAILURE/SHOCK	65	187 DENTAL EXTRACT/RESTOR	59	210 HIP/FEM PROCS >69-CC	102,272
337 TRANSUR PROSTATECT	64	112 OTHER VASCULAR PROCS	57	125 CIRC DIS-CARD CATH	97,082

Note 1. FY89 data obtained from Retrospective Case Mix Analysis System (RCMAS).

Note 2. Medicare DRG data obtained from "Desktop Resource" by J. Diemunsch, 1991, Healthweek, 5(8), p. 20.

Table 57

Comparison of the Top Twenty Five DRGs for WHMC Patients and the General Public in the U.S. Reported by HHS from the National Health Interview Survey

HHS NATIONAL HEALTH INTERVIEW SURVEY			WHMC	
ASSOCIATED DRGs	ILLNESS OR INJURY	BED DAYS	DRG TITLE	DISP
421	INFLUENZA	262,880	373 VAG DELIV WO COMPL D	1,246
100	COMMON COLD	71,938	391 NORMAL NEWBORN	1,153
423	OTHER INFECTIVE & PARASITIC DISEASES	39,991	467 OTH FACTORS INFL HLT	579
250-256,440-446	OTHER CURRENT INJURIES	35,919	468 UNRELATED OR PROCS	497
250-256,440-446	FRACTURES & DISLOCATIONS	33,551	125 CIRC DIS-CARD CATH	486
370-384	DELIVERY & OTHER CONDITIONS OF PREGNANCY & PUERP	31,305	187 DENTAL EXTRACT/RESTO	398
79,80,81,89,90,91	PNEUMONIA	30,587	183 MISC DIGEST DIS-18-6	369
250-256,440-446	SPRAINS & STRAINS	26,541	243 MEDICAL BACK PROBLEM	368
79,80,81,101,102	OTHER ACUTE UPPER RESPIRATORY INFECTIONS	23,503	39 LEWS PROCS W/NO VITR	353
68,69,70	ACUTE EAR INFECTIONS	22,417	398 IMMUNITY DISOR >69-C	344
421	VIRAL INFECTIONS, UNSPECIFIED	22,387	435 DETOX/OTH SYMPT TREA	297
209-256,471	ACUTE MUSCULOSKELETAL CONDITIONS	21,035	427 NEUROSES EXC DEPRESS	294
188,189,190	OTHER DIGESTIVE CONDITIONS	20,229	410 CHEMOTHERAPY	276
96,97,98	ACUTE BRONCHITIS	19,370	143 CHEST PAIN	276
250-256,440-446	CONTUSIONS & SUPERFICIAL INJURIES	15,637	430 PSYCHOSES	254
302-333	ACUTE URINARY CONDITIONS	14,488	359 TUBAL INTER-NONMALIGN	246
423	INTESTINAL VIRUS, UNSPECIFIED	13,309	323 URINARY STONES >69-C	244
250-256,440-446	OPEN WOUNDS & LACERATIONS	12,620	421 VIRAL ILLNESS >17	242
78,82,85-88,92-95	OTHER RESPIRATORY CONDITIONS	11,438	112 OTHER VASCULAR PROCS	225
422	COMMON CHILDHOOD DISEASES	10,277	162 ING/FEM HERN 18-69	215
182,183,184	INDIGESTION, NAUSEA, & VOMITING	6,957	25 SEIZUR/HEAD 18-69 WO	200
272,273,283,284	SKIN CONDITIONS	6,083	215 BACK/NECK PROCS <70	196
24,25,26	HEADACHE, EXCEPT MIGRAINE	5,785	466 AFTERCARE WO MALIGN	194
220,221,419,420	FEVER, UNSPECIFIED	5,463	55 MISC EAR/NOSE/THROAT	186
61,62,63,73,74	OTHER EAR CONDITIONS	3,212	389 FULL TERM W MAJ PROB	185

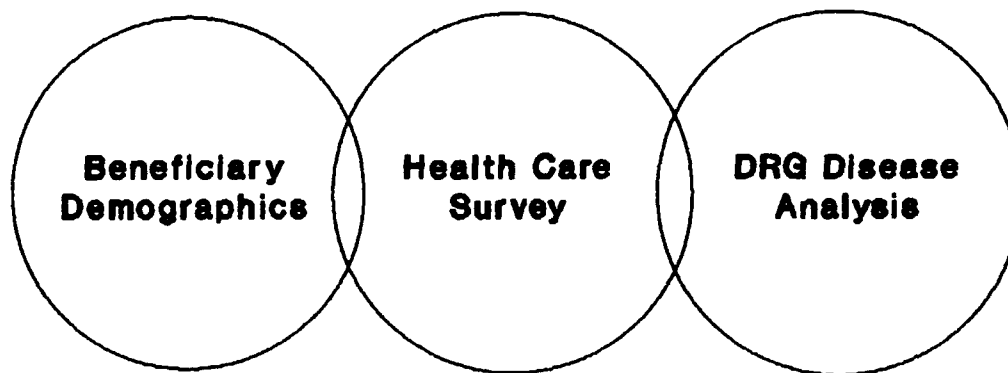
Note 1. From "Current Estimates from the National Health Interview Survey" by P. F. Adams and V. Benson, 1990, Hyattsville MD: National Center for Health Statistics.

Note 2. Associated DRGs were assigned by matching the illness/injury to specific conditions listed in the "Air Force Physician's DRM Working Guidebook" by E. W. Lorenz and M. K. Jones, 1989, Washington D.C.: St. Anthony Hospital Publications.

Note 3. FY89 data for WHMC obtained from Retrospective Case Mix Analysis System (RCMAS).

Figure Caption

Figure 1. Environmental Assessment Model.



- Obtain data from DEERS

- Determine service vs catchment area

- Stratify by age, gender, beneficiary category, and branch of service

- Used to determine beneficiary opinions and utilization of health care services

- Use WHMC survey as a guide

- Stratify sample population by beneficiary category

- Obtain data from RCMAS

- Analyze top 25 DRGs

- Compare with DoD, CHAMPUS, and U.S. population

S t r a t e g i c P l a n

Appendix A
Survey Approval Letter



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR FORCE MILITARY PERSONNEL CENTER
RANDOLPH AIR FORCE BASE TX 78150-6001

REPLY TO
ATTN OF

DPMYOS

1 APR 1991

SUBJECT

Survey Approval

TO

WHMC/SG-3R

Your Beneficiary Health Care Survey is approved and given USAF Survey Control Number (SCN) 91-16, which expires on 30 June 91. This number and the expiration date should appear on the coversheet for the survey. Please send us the total numbers of Air Force officers and enlisted personnel once you have received your sample. If you need any further assistance, call my project officer, Capt Holy Burgess, at 7-5680.


CHARLES H. HAMILTON, GM-13
Chief, Personnel Survey Branch

Appendix B
Announcement Letter



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS JOINT MILITARY MEDICAL COMMAND - SAN ANTONIO (ATC)
WILFORD HALL USAF MEDICAL CENTER
LACKLAND AIR FORCE BASE TX 78236-5300

Dear Health Care Services Beneficiary

You were randomly selected to participate in a special survey designed for beneficiaries living in this area. Within the next two to three weeks you will receive a Beneficiary Health Care Survey in the mail. This survey is part of an effort to determine the resources required for Wilford Hall Medical Center to deliver health care in the future. We need your help and this survey will be your voice into the planning process. The information you provide is extremely important and will make a difference in how health care is provided for you and your family in the future.

We are only sending this survey to a specified sample of the total beneficiary population in the greater San Antonio area. I am counting on your support and willingness to complete this survey to help us with the planning process. I assure you the answers you provide will be kept anonymous and are for official use only.

When you receive the survey please take the time to read and answer all of the questions. It should only take approximately 15 to 25 minutes to complete.

My staff and I are interested in learning what health care services you expect from Wilford Hall Medical Center. Thank you for your time and support.

Sincerely

EDGAR R. ANDERSON, JR.
Major General, USAF, MC
Commander

Appendix C

Control # 91-16
Expires 30 June 1991

Wilford Hall USAF Medical Center
Beneficiary Health Care Survey

Public Law 93-579, entitled the Privacy Act of 1974, requires that all individuals be informed of the purposes and uses of information solicited. Information obtained from this survey will not be released in a manner that will reveal the identity of the respondents. Participation is voluntary and no penalty will be imposed for failure to respond to these questions.

PURPOSE: To evaluate and obtain information needed to perform an assessment of the beneficiary population in the Wilford Hall USAF Medical Center Service Area.

USES: Information obtained will be statistically analyzed and used to prepare the Wilford Hall strategic plan.

You have been randomly selected to represent a number of Department of Defense Beneficiaries residing in the greater San Antonio area. Your participation is important to the validity of the survey. Your responses will help policy makers at Wilford Hall determine the resources required to deliver health care into the year 2000. Please take the time to complete and return the survey.

If you have any questions about this survey, please call Captain Larry Grems, Administrative Resident, Wilford Hall USAF Medical Center, Lackland AFB TX 78236-5300. (512) 670-5141. Thank you for your time and participation in this survey. Your answers are very important and will make a difference. Note: The numbers found next to responses in each question are for data collection purposes only. Please disregard them when answering the questions.

RESPONSE PROCEDURES: After completing the survey, please insert it in the self addressed, postage paid envelope and drop in any U.S. Mail Box.

Wilford Hall USAF Medical Center
Beneficiary Health Care Survey

Terms used in this survey:

Delta Dental Plan: A dental plan offered to dependents of active duty military personnel. If a military sponsor elects to join this plan, his/her dependents can visit civilian dentists for routine dental care. A small premium is deducted from the sponsor's paycheck every month to cover the cost of this health plan. There are limitations on the procedures that are covered under this plan. Please consult the Wilford Hall Health Benefits office for more information (670-6858).

Inpatient: A person who is admitted to a hospital bed to receive treatment and stays overnight in the hospital for at least one night.

Outpatient: A person who is treated in a provider's office or receives same day surgery and does not stay overnight in a hospital bed to receive treatment.

Provider: A physician, dentist, optometrist, nurse practitioner, physician assistant, or anyone else who prescribes medical and/or dental treatment.

Sponsor: The person whose military service makes it possible for family members to receive health care from the military health care system. For this survey, if both husband and wife serve(d) in the military, please consider the sponsor to be the person who has the longest length of time (years/months) in military service.

The family member who knows the most about the family's health care should complete this survey. It should only take 15 to 25 minutes of your time to complete this survey.

Place your answers directly on the survey pages. To conserve paper, the survey is printed on both sides, please be sure to answer every question. Please print clearly. You may use a pen or pencil to complete this survey.

1. General family information. (record age as of 31 December 1990)	Age (in years)	Gender (circle one)
a. Sponsor	1 _____	2 Male Female
b. Spouse	3 _____	4 Male Female
c. Child 1	5 _____	6 Male Female
d. Child 2	7 _____	8 Male Female
e. Child 3	9 _____	10 Male Female
f. Child 4	11 _____	12 Male Female
g. Other _____	13 _____	14 Male Female
h. Other _____	15 _____	16 Male Female

2. Who is filling out this survey? Please check one box.

10 Sponsor only 20 Spouse only 30 Sponsor and Spouse together 40 Other 17

Section A
**General Opinions about Health Care Services
 Provided at Wilford Hall USAF Medical Center**

3. How much do you agree with each statement listed below? Please circle only one number under the appropriate column that best describes your response to the statements listed.

	Strongly Agree	Agree	Not Sure	Disagree	Strongly Disagree	WHMC Not Used	
a. My family and I are satisfied with the health care we receive at WHMC.	1	2	3	4	5	6	(18)
b. Finding an open parking space at WHMC is a problem.	1	2	3	4	5	6	(19)
c. In an emergency, one can obtain medical care quickly.	1	2	3	4	5	6	(20)
d. Healthcare providers at WHMC treat us with respect.	1	2	3	4	5	6	(21)
e. WHMC has the resources needed to provide health care for all eligible beneficiaries in San Antonio.	1	2	3	4	5	6	(22)
f. It's hard to get an appointment at WHMC for most clinic services.	1	2	3	4	5	6	(23)
g. Places where we can get military health care in San Antonio are conveniently located.	1	2	3	4	5	6	(24)
h. After we arrive at a clinic in WHMC, we usually have to wait a long time to see a provider.	1	2	3	4	5	6	(25)
i. When our family needs health care we typically use a military facility.	1	2	3	4	5	6	(26)
j. WHMC is our primary facility for health care needs.	1	2	3	4	5	6	(27)

Section B
Family use and Cost of Health Care

4. During 1990, approximately how many times did your family seek care/treatment from a health care provider? Please write an answer in each space to the right for each question. Do not include visits made to a Dentist.

	Military Facility	Civilian Facility
a. How many visits for routine (short-term) care (minor illness)?	28 _____	29 _____
b. How many visits to an emergency room?	30 _____	31 _____
c. How many visits for long-term care (high blood pressure, diabetes, cancer, heart problems, allergies, etc...)?	32 _____	33 _____

5. For the entire family, please approximate the total number of outpatient medical/dental visits made to each of the following military facilities during 1990.

	Outpatient Visits	Dental Visits
Wilford Hall USAF Medical Center	34 _____	35 _____
Brooke Army Medical Center	36 _____	37 _____
Randolph AFB Clinic	38 _____	39 _____
Brooks AFB Clinic	40 _____	41 _____
Kelly AFB Clinic	42 _____	43 _____

6. During 1990, approximately how many days did you and/or your family (sponsor and dependents) spend in local hospitals as an inpatient? Please write the number or '0' in the space provided. Provide the TOTAL days for all family members.

Military Hospital	Civilian Hospital
44 _____ days	45 _____ days

7. During 1990, approximately how many visits did you and/or your family make to the dentist? Please write in '0' or the number in each column below. Please note: visits to a civilian dentist include those covered by the Delta Dental Plan.

Military Dentist	Civilian Dentist
46 _____ visits	47 _____ visits

8. Is your family enrolled in the Delta Dental Plan? Please make a check mark next to the appropriate answer (yes or no).

0 Yes	
0 No	48

9. During 1990 was there an occasion when you or someone in your family wanted to see a provider but for some reason could not? Please check each circle that applies.

- 49 0 No --> Go to the next question
 50 0 Yes, was too difficult to get an appointment
 51 0 Yes, did not have a way to get to the doctor
 52 0 Yes, could not get off work
 53 0 Yes, was afraid of finding out what was wrong
 54 0 Yes, did not have anyone to care for the children
 55 0 Yes, other reason (Specify) _____

10. During 1990, how many times did you or someone in your family seek care/treatment from a civilian health care provider because you could not gain access to a military provider (appointments unavailable, not open when needed, etc...)? Note: Do not include referrals made by military providers to civilian physicians. Please mark one circle only.

- 56 10 Never
 20 1 - 5
 30 6 - 10
 40 more than 10

11. Does anyone in your family have medical or dental insurance OTHER than CHAMPUS and Delta Dental? Please check all that apply.

- 57 0 No insurance --->
 Please skip to the
 next Section. Section
 C - Inpatient Care.
 58 0 Yes, medical insurance
 59 0 Yes, dental insurance
 (does not include
 Delta Dental)

12. Questions 12a-12c are about your medical and dental insurance OTHER THAN CHAMPUS and Delta Dental Plan. Please write answers for medical insurance, if you have it, in the column labeled Medical Insurance, and answers for dental insurance, if you have it, in the column labeled Dental Insurance.

	Medical Insurance	Dental Insurance
a. Who in the family is covered by either of the following two types of insurance? Please check all that apply.		

Sponsor	60 0	71 0
Spouse	61 0	72 0
dependents	62 0	73 0

b. Who pays for this insurance?
 Please check all that apply.

Self/Family	63 0	74 0
Employer	64 0	75 0

c. What kind of insurance is it?
Please check all that apply.

	Medical Insurance	Dental Insurance
Private insurance (Such as Blue Cross, Prudential, etc)	65 0	76 0
Health Maintenance Organization	66 0	77 0
Medicare Part A	67 0	
Medicare Part B	68 0	
Medicare Supplemental	69 0	
CHAMPUS Supplemental	70 0	

Section C Inpatient Care

In this section of the survey we are interested in any inpatient care you or your family may have experienced while living in the San Antonio area. The next question will determine if you should complete this section.

13. During the time you and your family have lived in this area, have you or any member of your family living in the family household been admitted to a hospital and stayed overnight? Please Note: The type of hospital is not important (military, civilian, VA). There are questions in this section that will cover that information. Please check only one circle.

78 0 Yes -----> Go on to the next question
 0 No -----> Skip to Section D. Outpatient Visits

Please answer questions 14-21 about the family member who was in the hospital most recently.

14. What year was the family member admitted to the hospital?

78a __19____

15. At the time of admission to the hospital, what was the family member's age?

79 _____ years old

16. What is the gender of the family member who had the hospital stay?

80 0 Male
 0 Female

17. Approximately how many days did the family member stay in the hospital?

81 _____ days

18. Which of the following was the one main reason the family member was admitted to the hospital? Please check one circle only.

- 82
- 1 0 Accident or injury
 - 2 0 Treatment of an illness, not including an operation
 - 3 0 An operation (surgery)
 - 4 0 Tests
 - 5 0 Pregnancy
 - 6 0 Psychiatric Care
 - 7 0 Other (Specify) _____
-

19. What clinic specialty was the family member admitted to? Please check only one circle.

- 83
- 1 0 General Surgery
 - 2 0 Internal Medicine
 - 3 0 Pediatrics
 - 4 0 Obstetrics/Gynecology
 - 5 0 Orthopedics
 - 6 0 Mental Health
 - 7 0 Cardiology
 - 8 0 Eye, Ear, Nose & Throat (EENT)
 - 9 0 Dental
 - 10 0 Other _____
-

20. Which type of hospital did the family member use? Please check one circle only.

- 84
- Military 1 0 Wilford Hall Medical Center, Lackland AFB TX
 - 2 0 Brooke Army Medical Center, Ft Sam Houston
 - 3 0 Other (Specify) _____
 - 4 0 Veterans Administration
 - 5 0 Civilian facility (Specify) _____
-

21. Who paid for the provider and hospital charges for this hospital stay? Please check all that apply.

- 85 0 The Family/self
 - 86 0 CHAMPUS
 - 87 0 Medicare
 - 88 0 Medicare Supplemental
 - 89 0 CHAMPUS Supplemental
 - 90 0 Private insurance
 - 91 0 Other (Specify): _____
-

Section D
Outpatient Care

In this section we are interested in the health care experiences of the person in your family who most recently received care/treatment in a provider's office (in the San Antonio area) and did not stay overnight.

22. During 1990, have you or any member of your family visited a health care provider as an outpatient? Please check one box.

- 0 No --> Go to Section E. General
92 Health Care Information
0 Yes --> Answer Questions 23-35.

REMEMBER: Questions 23-35 are for the person in your family who most recently visited a provider's office. Answer the questions concerning that person only.

23. What is the gender of the patient who went to the provider?

- 0 Male
93 0 Female

24. Which of the following best describes the one main reason why the family member had to receive care from a health care provider? Please check one box only.

- 94 1 0 Emergency care
2 0 Routine check-up (including well baby care)
3 0 Long-term care or chronic conditions such as
high blood pressure, diabetes, or heart problems.
4 0 Short-term illness (cold, sore throat, rash)
5 0 Pregnancy
6 0 Psychiatric care
7 0 Other (Specify) _____

25. What clinic service did the family member visit? Please check only one circle.

- 95 1 0 General Surgery
2 0 Internal Medicine
3 0 Pediatrics
4 0 Obstetrics/Gynecology
5 0 Optometry
6 0 Primary Care
7 0 Flight Medicine
8 0 Emergency Medicine
9 0 Mental Health
10 0 Other (Specify): _____

26. Did the family member make an advanced appointment for this visit?

- 96 1 0 Yes
2 0 No, used the Emergency Room
3 0 No, walked in the clinic

27. How many days did the family member have to wait to get an appointment?

- | | | | |
|----|---|---|----------------|
| | 1 | 0 | Not Applicable |
| | 2 | 0 | 1 - 3 days |
| 97 | 3 | 0 | 4 - 7 days |
| | 4 | 0 | 8 - 15 days |
| | 5 | 0 | 16 - 30 days |
| | 6 | 0 | over 30 days |

28. How soon would you like to be seen for a non-emergency medical condition?

- | | | | |
|----|---|---|--|
| | 1 | 0 | As soon as possible (same day or next day appointment) |
| | 2 | 0 | Less than four days |
| 98 | 3 | 0 | One week |
| | 4 | 0 | More than one week |
| | 5 | 0 | More than one month |

29. After arriving at the clinic, how many minutes did the family member wait before seeing a provider?

- | | | | |
|----|---|---|-----------------|
| | 1 | 0 | 1 - 5 Minutes |
| | 2 | 0 | 6 - 15 Minutes |
| 99 | 3 | 0 | 16 - 25 Minutes |
| | 4 | 0 | 26 - 45 Minutes |
| | 5 | 0 | Over 45 Minutes |

30. In your opinion, what is a reasonable waiting time for patients to see a provider in a military clinic, providing they arrive for their scheduled appointment on time?

- | | | | |
|-----|---|---|-----------------|
| | 1 | 0 | 1 - 5 Minutes |
| | 2 | 0 | 6 - 15 Minutes |
| 100 | 3 | 0 | 16 - 25 Minutes |
| | 4 | 0 | 26 - 45 Minutes |
| | 4 | 0 | Over 45 Minutes |

31. What type of provider did the family member see for this care/treatment? Please check only one circle. If the family member was seen by a 'Nurse Practitioner, or Other provider' please write in the type of provider. For example: if the family member was seen by a Nurse Practitioner and it was in pediatrics, then you would write in 'Pediatrics' on the blank line to the right of the Nurse Practitioner response.

- | | | | |
|-----|---|---|----------------------------|
| | 1 | 0 | General Practice Physician |
| | 2 | 0 | Pediatric Physician |
| | 3 | 0 | OB/GYN Physician |
| 101 | 4 | 0 | Surgeon |
| | 5 | 0 | Physician Assistant |
| | 6 | 0 | Nurse Practitioner _____ |
| | 7 | 0 | Other (Specify) _____ |

32. Did the family member receive care/treatment in a military facility?

- | | | |
|-----|---|---------------------------|
| | 0 | Yes --> Go to question 33 |
| 102 | 0 | No --> Go to question 34 |

33. Which military treatment facility did he/she use? Please check only one circle.

- 103 1 0 Wilford Hall USAF Medical Center
 2 0 Brooke Army Medical Center
 3 0 Kelly AFB Clinic
 4 0 Randolph AFB Clinic
 5 0 Brooks AFB Clinic
 6 0 Other _____

34. If the family member did not visit a military facility, where did he/she receive care/treatment? Please write in the name of the facility.

----- 113

35. Who paid for the cost of the visit for the family member? Please check all that apply.

- 104 0 No Cost - Military facility
 105 0 Family/self
 106 0 No cost/Delta Dental
 107 0 CHAMPUS
 108 0 Medicare
 109 0 Medicare Supplemental
 110 0 CHAMPUS Supplemental
 111 0 Private Insurance
 112 0 Other (Specify) _____

Section E Health Care Information

Wilford Hall planners want to know if you are receiving timely information about available health services you can use. The following questions will help us find out what you need to know and what new services you would like to see offered by Wilford Hall USAF Medical Center.

36. How do you usually get information about military hospitals and clinics? Please check all circles that apply.

- 114 0 Have not received any information
 115 0 Military Post, station, base newspaper
 116 0 Direct contact with military clinic/hospital personnel (telephone call or home visit)
 117 0 Handbook or brochure
 118 0 Spouse clubs
 119 0 Supervisor
 120 0 Friends and/or neighbors
 121 0 Army, Navy, Air Force Times
 122 0 Recruiters

37. Please identify the clinical services your family does not use. Please check all circles that apply.

- | | |
|------------------------------|---------------------------------|
| 123 0 Primary Care | 128 0 Flight Medicine |
| 124 0 Emergency Medicine | 129 0 Mental Health |
| 125 0 General Surgery | 130 0 Internal Medicine |
| 126 0 Pediatrics | 131 0 Obstetrics/Gynecology |
| 127 0 Optometry | 132 0 Other (Specify) _____ |

38. What clinical services does your family use on a recurring basis? Please check all circles that apply.

133	<input type="checkbox"/> Primary Care	138	<input type="checkbox"/> Flight Medicine
134	<input type="checkbox"/> Emergency Medicine	139	<input type="checkbox"/> Mental Health
135	<input type="checkbox"/> General Surgery	140	<input type="checkbox"/> Internal Medicine
136	<input type="checkbox"/> Pediatrics	141	<input type="checkbox"/> Obstetrics/Gynecology
137	<input type="checkbox"/> Optometry	142	<input type="checkbox"/> Other (Specify) _____

Wilford Hall USAF Medical Center has recently opened a refill pharmacy facility near the Lackland AFB Commissary/Base Exchange area.

39. Did you know this new facility was open?

☐ Yes

143 ☐ No

Note: If you answered YES, do you use the refill pharmacy call in service?

☐ Yes

144 ☐ No

Note: If you answered NO, the number is 670-7000/7001/7002/7003

We'd like your opinion concerning health care delivery at Wilford Hall USAF Medical Center. Please answer questions 40-42 using the space provided and the reverse side of this survey if necessary.

40. Please complete the following sentences: (please print your answers)

Wilford Hall Medical Center needs to improve _____
_____ 145

Wilford Hall Medical Center is best at doing _____
_____ 146

41. What is the most important new service Wilford Hall Medical Center should offer to eligible beneficiaries?

_____ 147

42. Please identify any other changes/suggestions you may have concerning health care delivery at Wilford Hall USAF Medical Center. Please be specific in your answer. Your opinions are extremely important to the Commander and will be reviewed by the executive staff. (as mentioned earlier your answers are anonymous and cannot be traced back to you in any way. We need your candid opinions about how we do business)

_____ 148

Section F
Background Information

This section covers general background questions about the sponsor in your family.

43. What is the sponsor's military status? Please check one circle.

- 149
- 1 ☐ Active Duty
 - 2 ☐ Retired from military service
 - 3 ☐ Retired, drawing disability pension
 - 4 ☐ Retired reservist
 - 5 ☐ Deceased

44. What is (was) the sponsor's branch of service? Please check one circle.

- 150
- 1 ☐ Army
 - 2 ☐ Air Force
 - 3 ☐ Navy
 - 4 ☐ Marine Corps
 - 5 ☐ Other (Specify) _____

45. What is the sponsor's present pay grade (or retired pay grade)? Please check one circle.

- 151
- | | | | | | |
|-----------------------------|-----------------------------|------------------------------|------------------------------|------------------------------|--------------------------------------|
| 1 <input type="radio"/> E-1 | 5 <input type="radio"/> E-5 | 9 <input type="radio"/> E-9 | 13 <input type="radio"/> W-4 | 17 <input type="radio"/> O-4 | 21 <input type="radio"/> O-8 |
| 2 <input type="radio"/> E-2 | 6 <input type="radio"/> E-6 | 10 <input type="radio"/> W-1 | 14 <input type="radio"/> O-1 | 18 <input type="radio"/> O-5 | 22 <input type="radio"/> O-9 |
| 3 <input type="radio"/> E-3 | 7 <input type="radio"/> E-7 | 11 <input type="radio"/> W-2 | 15 <input type="radio"/> O-2 | 19 <input type="radio"/> O-6 | 23 <input type="radio"/> O-10 |
| 4 <input type="radio"/> E-4 | 8 <input type="radio"/> E-8 | 12 <input type="radio"/> W-3 | 16 <input type="radio"/> O-3 | 20 <input type="radio"/> O-7 | 24 <input type="radio"/> Do not know |

46. What is the sponsor's present marital status? Please check one circle.

- 152
- 1 ☐ Married
 - 2 ☐ Single, never married
 - 3 ☐ Divorced or legally separated
 - 4 ☐ Widowed
 - 5 ☐ Does not apply (deceased)

47. Are your dependents enrolled in DEERS? Please check one box.

- 153
- 1 ☐ Yes
 - 2 ☐ No
 - 3 ☐ No dependents
 - 4 ☐ Don't know

48. What is your Zip Code?

Zip Code _____ 154

Thank you for filling out this survey. Please return the survey in the enclosed postage paid envelope.